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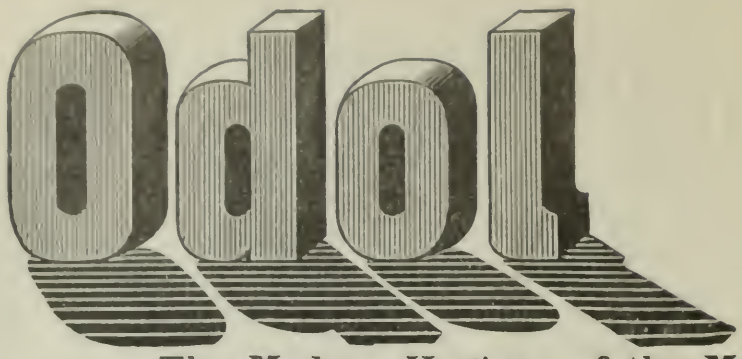

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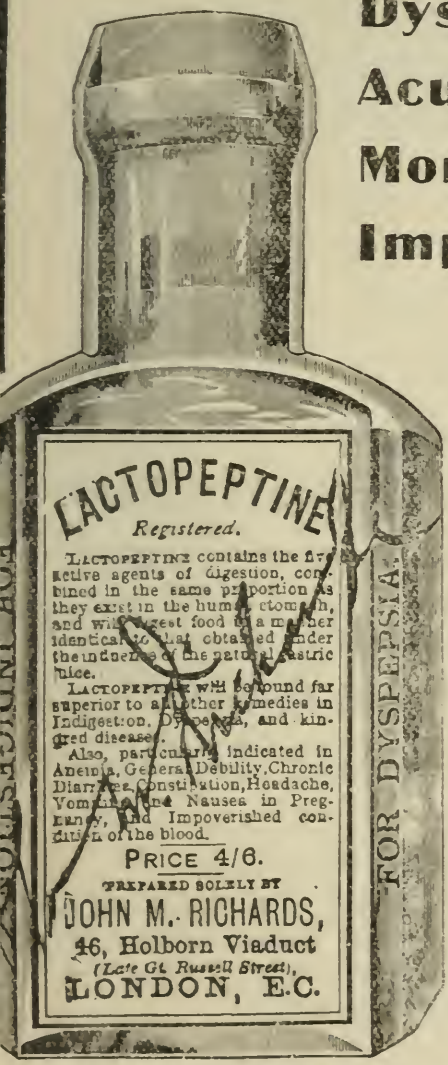
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Report on Public Health. By SIR CHARLES A. CAMERON, C.B., M.D.; D.P.H., Camb.; M. and Hon. F.R.C.P.I.; F.R.C.S.I.; F.I.C.; Ex-President, Hon. Dipl. Public Health, and Professor of Hygiene and Chemistry, R.C.S.I.; Vice-President and Ex-President of the Royal Institute of Public Health, and of the Society of Public Analysts; Medical Officer of Health for Dublin; Hon. Member of the Hygienic Societies of France, Belgium, Paris, and Bordeaux, the Academy of Medicine, Sweden, and of the State Medical Society of California, &c.; Examiner in Sanitary Science, Royal University of Ireland; Member of the Army Sanitary Committee, Harben Gold Medallist, 1903, &c.:—

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SEPTEMBER 1, 1904.

PART I.

ORIGINAL COMMUNICATIONS.

ART. X.—*On the Need for Family Care of Persons of Unsound Mind in Ireland.*[a] By CONOLLY NORMAN, Medical Superintendent, Richmond Asylum, Dublin.

THE question of the adoption in Ireland of family care as a method of dealing with mental unsoundness is at once highly academic and highly practical: academic, because this mode of treatment has never been hitherto attempted in that country; and practical, because it may be said, with a slight modification of a familiar line, that no nation wants it so much. Perhaps all this is only another way of saying that the question stands exactly in that position in which any earnest and vigorous reformer likes to take a subject up. The crop is ripe, but no sickle has yet swept over the field.

How fresh the topic is in Ireland may be indicated by the remarkable discussions that have been lately going on with reference to the public treatment of the insane in that island. Ireland is probably the poorest country in Europe, and the country in which the great majority of the population live under the least complex and the least highly-developed conditions. Circumstances of various kinds,

[a] A paper read at a meeting of the International Home Relief Congress, Edinburgh, June, 1904.

however, have brought the lunacy problem into extreme prominence—a prominence rarely obtained for it in any other comparatively primitive country. The complete transference of power in respect of matters of local government from one portion of society to another, the latter having been until recently quite unaccustomed to the responsibilities of self-government, has tended to bring prominently before the public mind a number of social problems that were hitherto hidden more or less below the surface. The comparative accuracy of modern statistics, the effect of the accumulation of patients in asylums under improved management, and a possible real increase in occurring insanity, due to the indirect results of excessive emigration, have together contributed to bring about this curious state of affairs, that the number of insane who are registered is rapidly and largely increasing, while the general population is decreasing. According to the most recent official calculations, there is in Ireland one person of unsound mind to every 178 of the general population. Meanwhile, wealth—at least, such wealth as is represented by the margin available for charitable purposes—is not increasing, while the struggle for existence is daily becoming more keenly felt.

Some counsels that have been suggested in this matter savour of desperation. It has been held, apparently on the authority of an illustrious literary man and distinguished doctrinaire politician, that the asylums themselves are responsible for the increase of insanity, inasmuch as by keeping alive and curing persons of unsound mind they have led to a degeneration of the race. There are even nebulous hints floating in the air that it might be well to render those who have been insane incapable of propagating the species so as to lead to a greater freedom from disease in succeeding generations. There is a pretty general and strong prejudice against asylums conducted on modern lines. Those who do not openly call them nurseries of insanity, at least look upon them as places where the mentally affected receive treatment which is unduly costly in proportion to the advantage accruing to the rest of the population. If we had not learned of recent years

to regard as entirely too narrow that view of development which looks upon natural selection as being the only instrument to bring about the immediate betterment of the physical condition of the existing generations we might have some sympathy with the sentiment which would dictate that the insane should be practically left uncared-for, and should be allowed to perish by natural processes. But the more extended and philosophical view which we now see to be the only tenable one forces us to conclude that the care of the unfit subserves some great ulterior developmental end, and is—to take no higher view of it—the necessary step towards the attaining of a more perfect social state. Indeed, that it should be necessary to discuss this aspect of the matter at all is surprising, and appears to show the chaos of public feeling on such topics in my country.

It may be said that these are themes which it is unnecessary to more than hint at in addressing my present audience, and in fact I have merely referred to them as indicating that the question of reform in the treatment of the mentally afflicted is ripe for consideration in Ireland, and that the present is probably a favourable opportunity for ventilating the subject. It is easier to obtain a hearing for the suggestion of humane and advanced methods when the public is interested in the whole question, even though wild doctrines are being hurtled abroad, than in times when the public is apathetic.

Now, the existing state of affairs is this: the local governing bodies have determined to build no more expensive—that is to say, modern—asylums, and yet it is felt that, pending the operation of more drastic measures, some provision must be made for the increasing numbers of the insane. When the Irish Local Government Act was passed in the year 1898 its authors, acting apparently on very insufficient information, and having accepted very hasty and immature views, were unfortunate enough to adopt an enactment whereby a rate-in-aid, amounting to 2s. per head per week, was to be available for insane persons who were chronic and harmless, and who were to be maintained in disused

workhouses or other suitable buildings apart from the existing lunatic asylums. The amount of rate-in-aid for these new institutions is just half of that which is available for the existing asylums, and thus the suggestion is made by the Government that a number of asylums should be started in the country at about half the cost of the existing institutions—such new asylums to be filled by the class called chronic and harmless. If some better scheme be not adopted within a few years there can be little doubt that these new cheap and inferior asylums will spring up all over the country, that they will fail to work satisfactorily, and that they will eventually be either suppressed or profoundly modified. There can be no doubt but that in the meantime they will have done an immensity of harm. It is, therefore, the more necessary at present to suggest some other mode of dealing with the existing problems—some mode which will not revolt the public conscience by insufficient humanity, and will also not prove too great a drain on the public purse in a very poor country. It would ill become a member of our specialty to encourage in any way the popular prejudice against asylums. In the first place, no one who reflects can fail to see that this prejudice is really to a large degree merely a survival, under slightly modified form, of the old prejudice against the insane themselves. The deep instinctive dread and hatred of insanity and of the insane is at the present day recognised as a thing which cannot be avowed, but those who one hundred years ago would have been loudest in giving expression to these feelings, and must now conceal them, satisfy the primæval instinct by abusing asylums and their directors. Besides, asylums must be accepted as an evil, if you will, but a necessary and inevitable evil in many cases. When all this has been said, the fact remains that there are a great many objections to be made against what we may call asylum life. The natural unit of society is the family. Existence in large institutions, which are not, and cannot, be modelled on family life, is an unnatural one. Such existence is uninteresting, monotonous, and irksome. Its tendency is to drive the mind in upon itself, to produce unhealthy brooding and

dreaming, and to deprive the individual of the ordinary interests that belong to his fellow-creatures. The association together of numbers of persons with few interests in common, and who are not bound to each other by the close, and yet elastic, tie of family affection, is irksome, and tends to develop bad feeling and selfishness. Now, these drawbacks are common to all public institutions, and are not entirely peculiar to asylums. They are felt not only by the patients, whom the public charity is intended to benefit, but they are felt by the staffs who administer the charity. Among the latter, petty jealousies, suspicions, and all kinds of rancorous ill-feelings are apt to arise, and are surely fostered by the peculiar conditions of institution life. Association without the most perfect harmony engenders an irritability which is hostile to all good feeling. It is proverbial that this condition of affairs springs up even amongst the most high-minded. There is an old Celtic story of how St. Patrick, bestowing a bishopric on a favourite disciple, told him he was sending him to a See so situated that they would not be too far apart to meet occasionally, nor too near to remain friends. It is possible that our patients often feel the injurious effects of institution life less than might be expected, because their condition is an abnormal one already, but no one can have watched the effects which supervene in old nurses and attendants without being painfully aware that in many cases a marked deterioration of disposition is the consequence of the unnatural, monotonous, and trying nature of their surroundings and of their calling. So much have I myself been struck by this that I have long held that the most perfect way to obtain asylum service at its best would be by the organisation of a short-service system, whereby the great majority of the staff—excepting, of course, those who have shown special aptitude and special staying power—would be young and fresh. I observe that Professor Kräpelin would appear to have arrived at a somewhat similar conclusion, for I have recently seen him quoted as holding that an asylum attendant's period of service should be limited to ten years. I dwell upon this point not only as showing that there is something un-

hygienic in the moral atmosphere of large institutions, but also because it seems to me to require being pointed out that as our attendants are to a large degree the instruments by which we work upon our patients, if the conditions of asylum life are unhealthy we will find ourselves in the end working with blunted and rusty tools.

There are then weighty reasons for avoiding, as far as is possible, the accumulation of patients in asylums, and the multiplication of those edifices. When and where an asylum must be built, it ought to be built and managed and manned in the very best possible manner, bearing in mind that its object should be to form a hospital for the cure of the curable, for the treatment of the sick, for the safeguarding of those who cannot be allowed to be at large, and for the amelioration and thorough study of the condition of such patients as can eventually, under proper regulations, be restored to family life with a fair measure of safety, though uncured. It is the class to whom I have last referred who mainly tend to accumulate, and taking into account the well-known money saving which can be accomplished by a system of family care, it would appear that such cases can be treated economically, and yet with an avoidance of the peculiar evils that are apt to arise in connection with asylums. It is much to be regretted that in the framing of the Irish Local Government Act this question was not brought before those who were responsible for that statute. The alternative to the ordinary asylum contemplated in the present Irish law is an institution to be run at half price. Economy is to be obtained by diminishing medical supervision to something approaching a vanishing point, and by lessening the staff to such a degree as would probably render efficient care unattainable, and would put nursing out of the question. The housing of the insane in public institutions in Ireland has been described as extravagant, palatial, and so forth. We may yield this point because it is very improbable that any of the new second-rate asylums will be able to work without such modifications as will bring them very near, if not quite up to, the majority of the existing asylums whose architectural

advantages have been so much exaggerated. But the new second class asylums being deficient in supervising staff, being carefully lopped of every extravagance, will be places where no occupation and no amusement can be provided for the inmates at the proposed cost. Such places would have every disadvantage belonging to an asylum without any of the safeguards or any of the ameliorating agencies that modern science and modern humanity have found to be required. It is impossible to say precisely what class of the insane were intended for these particular institutions, and it would appear that the framers of recent enactments have the most shadowy ideas on the subject. If the chronic and harmless mean the working population of our asylums it would be a manifest, gross, and intolerable injustice that these poor people should be subjected to all the discomforts of asylum life without any of its ameliorations, as would be the case in a second-rate cheap asylum. If, on the other hand, the chronic and harmless include the old and feeble and bed-ridden, I submit that, from a merely humanitarian point of view, these people require more care than the more recent and acute cases, who, by their recovery, are apt to give a better result for the money spent.

I feel that in saying so much on the general aspects of this question I am undertaking a task that may seem superfluous to most of my present hearers, but I enter upon these details in order that the position of the question in my country may be thoroughly intelligible. Speaking here, and speaking to you, I need not adduce any arguments as to the feasibility of the family care of the insane. It is probably not too much to say that the family care of a large section of the unsound of mind has proved possible, beneficial, and economical in every country where it has been intelligently and conscientiously attempted. In any place where the endeavour has been made up to the present success has followed when anyone has been found who has taken up the subject, as Dr. Féré has said, "in the way he would take up his own business."

There are in Ireland three practical difficulties, not one of which is insuperable, if one can judge from experience

elsewhere. The first may be called official *vis inertiæ*. In all public departments there is, of course, a tendency to go on doing in the future what has been done in the past. Irish officials may, perhaps, be forgiven for carrying this tendency further than other people on account of their peculiarly isolated and insecure position. There is, unfortunately, no body of public opinion in the country which is sufficiently intelligent and disinterested to act as a motive force in any particular direction on such subjects as the conduct of great public charities. The second difficulty arises from the fact that the bodies which now carry on local government in Ireland, being new to their duties and responsibilities, are not very easy to move in the direction of something which they may conceive to be risky and unpopular. Unpopular with the uninstructed bulk of the people such a measure as family care of the insane would surely be at first, and it would, therefore, seem much easier and more popular for the local bodies to go on constructing or adapting asylums on a more or less economical plan instead of diminishing the occupation of these institutions by the adoption of family care. The third difficulty which I see in the way is the difficulty of finding suitable locations for our patients. The Irish peasants, who form the class from whom most of our patients are drawn, are very poor, and, therefore, would be willing enough to receive the help which the payment for a patient might bring them. They are very kindly and very tolerant of the infirm, and would, therefore, I think, make good hosts for the insane, but they are, unfortunately, themselves probably among the worst-housed—if not the very worst-housed—of the populations of Western Europe. It must be said that things are slowly bettering themselves in this respect, and there is every reason to hope that the betterment will be more material and quicker in the near future. For the present it seems to me that this is the most serious difficulty in the way of family care in Ireland. The other two difficulties, I think, would be more readily overcome. The County Councils could eventually be persuaded that their interests and those of the insane are identical in these matters, and

if public opinion favourable to the experiment can be evolved it is to be hoped that the official *vis inertiæ* of which I have spoken would not prove an impassable barrier. One advantage we would have in attempting family care in Ireland—and this no small advantage in beginning anything—namely, that there is nothing to be undone. Sir Arthur Mitchell's book on the "Treatment of the Insane in Private Dwellings in Scotland" has shown us that talent and industry applied in this humane cause were capable, in the hands of the Scotch Commissioners, of drawing family care out of the slough of abuses in which it had nearly been overwhelmed. No such difficulty exists in Ireland. Some foresight and prudence will, no doubt, be required in the inauguration of such a system. Care must be taken not to let the zeal of beginners outrun all support from popular opinion, and every endeavour should be adopted to avoid the occurrence of any scandals or risks in the earliest stages of the experiment. These precautions are, of course, easier to talk about in an abstract way than to carry out practically, but they are only such things as are necessary at the beginning of every fresh enterprise.

In my opinion, family care of the insane in Ireland should be organised in connection with the district asylums. Only cases that have been studied in an asylum, that are thoroughly well known to the medical staff, should be sent out to family care. I am not one of those who believe that a perfectly ignorant person is likely to form as intelligent a judgment on a difficult and risky subject as one who has devoted his time and attention to that subject. Whatever we do there is an element of risk in the family care of the insane just as there is an element of risk in the asylum care of the insane, and in either case the chief responsibility will best rest upon the person who is best acquainted with the peculiarities of his patient. Provision should be made for the power of returning the patient to the asylum whence he has come should his physical or mental state demand such a course, or should his location prove, in the opinion of the authorities, to be in any way unsuitable. Provision should be made that the patients be visited by the Medical Superintendent in the

homes of their hosts at such intervals as may be deemed suitable, and also occasionally irregularly. Provision should also be made by which the patient should visit the asylum and report himself if required to do so at stated intervals, following therein the example of the Berlin system. An arrangement of this kind could be effected with the least alteration in the existing law. There is an enactment in Ireland at present whereby a patient can be discharged from a district asylum on trial, while his maintenance is met from the asylum funds for the period of one month. Of this enactment I myself make frequent use, but it is manifestly insufficient even for its present purpose—the period of one month's trial being mostly quite inadequate. An extension of this provision, with an arrangement that the period of trial could be from time to time renewed after expiration should the patient still remain insane, would enable patients to be, practically speaking, boarded out in family care. Of course, further and remoter supervision of patients in family care, together with supervision of their physicians, would be called for, just as is the case with patients in asylums. No doubt an addition would be requisite to the staff of Commissioners, or, as they are called in Ireland, Inspectors, but that would probably be desirable in any case, since those officers are numerically inadequate to the duties they are now called upon to perform, although, perhaps, not so preposterously inadequate as their colleagues in England. The proposal to send out patients from the district asylums into family care, and retain them under the general supervision of the medical staff of the asylum, would also probably involve in most cases some increase of that staff. The economy which could be effected in maintenance by family care would probably be sufficient to cover the additional cost of inspection that would be involved, and also to leave a not inconsiderable margin. With regard to the total saving, however, I am not inclined to encourage a hope of a favourable balance on the maintenance account, although I believe that there will not be a deficit. My reason is that it seems to me that a great number of the patients whom we could send out into family care, and to

whom we would give the pleasures of modified liberty and of family life in lieu of the supposed luxuries of an asylum, would be those very patients who would be most useful to us in the internal working of the institution. The loss of their services would either involve the employment of more paid attendants, or the purchase of more ready-made goods, or both, and a certain increase of the asylum maintenance account on this head must be expected.

I have not said anything of the supervision or visitation of the patients in family care by Poor Law Medical Officers. I am doubtful as to how far it is safe anywhere to depend in any degree on what I fear must be a very perfunctory duty, and I am confident that such dependence must necessarily limit very greatly the cases in which family care might be utilised. However this may be elsewhere, and under other conditions, no one who knows what the Irish Poor Law Service is, and how entirely overworked its medical men are at present, can imagine that any supervision it would be in their power to bestow on the insane in family care would be sufficient. There is also another reason why it is undesirable to associate the Poor Law Service with this work. In Ireland our public patients are not paupers. They are not brought to the asylum by relieving officers. They are sent to us from the workhouse only if they happen to have for some other reason obtained admission to that institution. The service of lunacy in Ireland is not a branch of the Poor Law Service, and it is very desirable in the interests of our patients that it should never be. It is true, unfortunately, that insanity is the most pauperising of diseases, but as we have been able hitherto to manage our insane, both with regard to fiscal requirements and otherwise, without stigmatising them with the quite unnecessary brand of legal pauperism, it is very desirable that we should continue to do so. This was clearly seen by Sir Arthur Mitchell and his Commission who, reporting some years ago on the reforms required in relation to Irish lunacy, strongly deprecated the amalgamation of the two services. To endeavour now to associate pauperism and mental unsoundness would be a distinctly retrograde step.

ART. XI.—*Suggestions for the Prevention of Puerperal Infection in Private Practice.*[a] By JOHN W. BYERS, M.A., M.D., M.A.O. (*Hon. Causâ*); Professor of Midwifery, Queen's College, Belfast; Physician to the Belfast Maternity Hospital; and Physician for Diseases of Women to the Royal Victoria Hospital, Belfast; Examiner in Obstetric Medicine and Gynæcology to the Royal University of Ireland.

ONE of the special advantages of the annual meetings of the British Medical Association is that it affords an opportunity of hearing the views of medical men from different places on the various questions that may be brought forward for discussion in the Sections, and surely no subject is of greater importance—alike from a national as from a professional point of view—than that of the prevention of those conditions—so often fatal—which are due to puerperal infection.

Since the introduction of the modern antiseptic and aseptic methods in the obstetric art, an enormous improvement has taken place in the general results of midwifery practice. This is seen especially in the maternity hospitals. In my student days, and even in the early years of my practice, maternity hospitals were regarded by the public with the greatest suspicion. Puerperal fever was constantly breaking out in them, and, owing to this fact, their wards had frequently to be closed, and many members of the profession were in favour of abolishing altogether such institutions. Now all this changed, and there is no place in which a woman can be more safely located for her confinement than in a properly conducted maternity hospital. Of the many advances I have seen since I joined the Profession nothing is more striking than the change brought about in the results of obstetric practice in lying-in hospitals by the adoption of the antiseptic and aseptic methods.

The following statistics from two Irish maternity

[a] Paper read in the Section of Obstetric Medicine, Oxford meeting of the British Medical Association, July 28, 1904.

hospitals (at one of which I received my midwifery practical training, while I am now on the medical staff of the other) are noteworthy:—

1. *Mortality at the Rotunda Hospital.*—During the last two years (ending November 1st, 1902, and November 1st, 1903) there were 3,370 intern cases with 15 deaths, and 4,233 extern cases, with 9 deaths—that is, out of a total of 7,603 there were 24 deaths, or a mortality of 0.32 per cent., and of these 24 deaths 8 were due to sepsis (puerperal infection)—that is, a mortality of 0.1 per cent.

2. *Mortality at the Belfast Maternity Hospital.*—During the last two years (1902 and 1903) there were 638 intern cases, with 2 deaths, and 555 cases in the extern maternity, with 2 deaths—that is, a mortality of 4 in 1,193 cases, or 0.33 per cent., and none of the deaths were caused by puerperal infection.

Adding together the cases from these two Irish maternities, we have a total of 8,796 cases, with 28 deaths, or a total mortality of 0.31 per cent., and a mortality from sepsis (puerperal infection) of 0.09.

At both of these institutions midwives and students receive their practical training. The Rotunda Hospital in Dublin is the largest maternity in the British Empire. The Maternity Hospital at Belfast is a very old one with sixteen beds and an extern maternity; but a new and greatly enlarged institution, with every modern appliance, is at present in the course of erection in that city, and will be ready next year. It will be of the greatest assistance in the training of students and midwives in practical midwifery.

When we turn to private practice the brilliant results obtained in maternity hospitals, it will be seen, have not followed. Here are the latest available statistics on this question, kindly given me by the Registrars-General of England, Scotland, and Ireland. I append them in the form they were sent:—

ENGLAND AND WALES.

Death-rates from Puerperal Fever (under which term are included deaths recorded from Puerperal Septicæmia, Puerperal Pyæmia, Phlegmasia Alba Dolens, and Puerperal Fever not otherwise defined) in England and Wales in the years 1900, 1901, *and* 1902.

Year	To a million Females living	To a million Persons living
1900 ..	121 ..	63
1901 ..	122 ..	64
1902 ..	118 ..	61

Figures for 1903 not yet available.

DEATH-RATE IN SCOTLAND FROM PUERPERAL SEPTIC INFECTION IN THE YEARS 1900 AND 1901.

Year	Deaths from Puerperal Septic Infection	Death-rate per 100,000 of Female Population	Death-rate per 100,000 Births
1900	225 ..	10 ..	171
1901	287 ..	13 ..	217

The figures for 1902 and 1903 are not yet available.

REGISTRATION OF DEATHS, IRELAND.

TABLE (A)—*Showing for Ireland the number of Deaths from Puerperal Septic Diseases (including Phlegmasia Alba Dolens) of females aged* 15 *and under* 55 *years, and at the undermentioned age-periods comprised in these ages, during each of the three years* 1900–1902.

DEATHS FROM PUERPERAL SEPTIC DISEASES IN IRELAND.

Year	Ages: 15 and under 55	Age-periods				
		15 and under 20 years	20 and under 25 years	25 and under 35 years	35 and under 45 years	45 and under 55 years
1900	235	2	28	131	72	2
1901	230	3	30	121	74	2
1902	220	7	25	112	73	3

Table (B)—*Showing the rate per* 10,000 *of the number of Females in Ireland of the respective ages, according to the Census of* 1901, *represented by deaths from Puerperal Septic Diseases of Females aged* 15 *and under* 55 *years, and at each of the age-periods as shown in Table* (*A*).

Year	Ages: 15 and under 55	Age-periods				
		15 and under 20 years	20 and under 25 years	25 and under 35 years	35 and under 45 years	45 and under 55 years
1900	1.853	0.084	1.234	3.902	2.892	0.091
1901	1.813	0.126	1.322	3.604	2.972	0.091
1902	1.734	0.294	1.102	3.336	2.932	0.137

Table (C)—*Showing the rate per* 10,000 *of the number of Married Women in Ireland of the respective ages, according to the Census of* 1901, *represented by deaths from Puerperal Septic Diseases of Females aged* 15 *and under* 55 *years, and at the age-periods as shown in Table* (*A*).

Year	Ages: 15 and under 55	Age-periods				
		15 and under 20 years	20 and under 25 years	25 and under 35 years	35 and under 45 years	45 and under 55 years
1900	4.997	11.306	9.257	8.549	4.616	0.155
1901	4.891	16.959	9.918	7.896	4.744	0.155
1902	4.678	39.570	8.265	7.309	4.680	0.233

Figures for 1903 not yet available.

The number of deaths from puerperal septic diseases in Ireland also represent 23.3, 22.8, and 21.6 per 10,000 births registered in the years 1900, 1901, and 1902, respectively, and 5.3, 5.2, and 5.0 per 100,000 of the estimated population of both sexes and at all ages.

In my Presidential Address, delivered at the opening of the Section of Obstetric Medicine and Gynæcology at the annual meeting of the British Medical Association in Cheltenham, July 31, 1901, I gave the statistics of mor-

tality from puerperal fever in England and Wales, Scotland, and Ireland, for the five years 1895-1899, inclusive.

While the above figures give the mortality in obstetric practice it must always be recollected that there is another test besides (1) absence of mortality, as an indication of successful midwifery work, and that is (2) absence of morbidity, by which we mean milder forms of puerperal infection, recognised clinically by slight feverish attacks, and having underlying pathological lesions such as cellulitis, salpingitis, or salpingo-ovaritis, and slight attacks of phlegmasia alba dolens—conditions which lead sometimes to secondary sterility, and often necessitate subsequent gynæcological treatment.

The difference in the results in these two sets of statistics indicates that the chief mortality takes place outside of maternity hospitals—that is, in general practice: and it is corroborated by Dr. W. Williams (Medical Officer of Health to the Glamorgan County Council), who, in his Milroy Lectures—"Deaths in Childbed, a Preventable Mortality"—recently delivered before the Royal College of Physicians of London, and published in the *Lancet* of June and July, 1904, shows "that during the last twenty years, when a more accurate registration has been adopted, upwards of 40 per cent. of the total childbed mortality has been caused by septic diseases." The twenty years are from 1881 to 1900. It is also a remarkable fact that during this period of undiminished puerperal mortality sanitation has made rapid strides, and that both the occurrence of, and the mortality from, such diseases as typhoid and tuberculosis have gradually diminished, while "the mortality of lying-in institutions, both in their internal and external departments, has also decreased to the vanishing point" (Williams). These facts—as well as the circumstances pointed out by Dr. Williams that notwithstanding the precautionary measures adopted in general midwifery practice, 4,000 mothers are annually lost in England and Wales (speaking generally, it may be said the deaths from accidents of childbirth and puerperal fever, as shown by the statistics of death registration, amount to about 4.7 per 1,000 births, and almost one-half

of these are due to puerperal infection; for example, there were in 1901 in England and Wales 2,079 deaths from puerperal fever, and 2,315 from other causes—accidents, &c.)—as well as the statistics I have given naturally raise the question, Why is it that the results of private midwifery practice are not so good as these obtained in maternities? I may be allowed to answer this by asking three questions:—

1. Is the practical teaching of students and midwives in obstetric work as thorough as it should be? Are midwives taught to appreciate fully all that is now known as to the causation of puerperal infection, and the grave responsibility that this knowledge brings upon those engaged in that line of practice? Why is it that the licensing bodies demand from students evidence of having had a clinical training and a practical experience in midwifery so much less than what is required in the subjects of surgery and medicine? Is there not a risk that, owing to the introduction of so many new subjects in the medical curriculum, some of the older branches, which lie at the foundation of practice, such as obstetrics, are being neglected?

2. Are we as careful (and this applies to both nurses and medical men) in carrying out the details of the antiseptic and aseptic methods in private practice as in maternity hospitals?

3. Is there not often too much meddlesome interference in obstetric practice?

Before venturing to make any practical suggestions for bringing the results of private midwifery practice more into line with what is now the rule in maternity hospitals it may render this task easier if we first consider certain facts which throw a light upon the nature of puerperal infection.

(1) In at least 75 per cent. of midwifery cases labour is a natural physiological process, occurring in such a manner that nothing more than a certain amount of care—expectant watchfulness—is required, and no interference is needed.

(2) A woman who delivers herself spontaneously, and

who has never been examined internally, rarely has any signs of puerperal infection. Leopold was the first to show this, when he pointed out that at the Dresden Lying-in Hospital of a series of 248 cases who were delivered without medical aid, who were neither examined, touched, nor syringed, 98 per cent. had no fever during the puerperium. Five only had febrile symptoms, and they were slight. This observation has since been frequently confirmed by others.

(3) Women who enter a lying-in hospital after delivery—that is, those confined on the way to the hospital—rarely suffer from puerperal infection, because, through not having been examined internally, they have avoided the risks of having the germs which cause the disease conveyed to them. This fact has been observed frequently by those connected professionally with maternities.

(4) The uterus and vagina in a pregnant woman, who has not been examined internally, contain no pathogenic organisms, but, as has been demonstrated by Whitridge Williams, of the Johns Hopkins University, they are present on the inner surface of the labia and the margins of the hymen in at least 60 per cent. of pregnant women, and the mere introduction of a sterilised glass speculum two centimetres in diameter, which, he points out, is no larger than the two fingers employed for examination, carries micro-organisms into the vagina in at least one-half of such cases.

(5) The results of midwifery practice become better the less vaginal examination and the more abdominal palpation is used.

(6) Vaginal examinations during labour are always attended with risk, and should never be employed unless to elicit information for the welfare of the patient which cannot otherwise be obtained by abdominal palpation. It must never be forgotten that a patient in labour who has not been examined internally is almost absolutely safe from the risks of puerperal infection.

(7) Puerperal infection is due to the introduction of micro-organisms which may be found on the patient's

vulva, her clothes, bed, instruments, and the hands and clothes of those who look after her; hence the importance of disinfection of the patient's vulva, of a clean bed and clothes, of disinfection of all instruments, and of the hands of her attendants, who should wear sterilised overalls, or clean, freshly-laundried towels pinned carefully so as to prevent their own clothes coming in contact with the patient. Care should be taken that in the case of an internal examination the hands after being disinfected do not become fouled again by touching the bed, clothes, vulva, &c., before entering the vagina. In making a vaginal examination (the vulva having been previously washed with soap and water, and rinsed with a corrosive sublimate lotion 1 in 1,000) the disinfected thumb and forefinger of the left hand are used to hold open the vagina so that the fingers of the right hand, previously sterilised, pass direct from the basin of corrosive sublimate lotion into the parts without touching the inner surface of the labia or hymen. The same care and precautions should be taken in sterilising the hands in obstetric as in surgical work. These facts suggest certain precautions which must be observed if we are in private practice to prevent the occurrence of puerperal infection:—

I. Nurses and students should be taught clearly the risks of vaginal examination and the great value and absolute safety of replacing this method by abdominal palpation. So far back as 1886, Credé wrote—"Even the simplest manipulation may cause infection. It should, therefore, be laid down and taught as a fundamental principle that internal examination of parturient women should be altogether avoided or restricted within the narrowest possible limits. It can be very well replaced by external examination. To instruct their pupils as thoroughly as possible in this method is the present and future duty of teaching institutions." Have we teachers done our duty in this respect? Is it not too often the case that reliance for diagnosis is placed on vaginal examination alone, employed as a mere matter of routine, to see how the labour is proceeding, while the danger involved in such a method is not fully realised? I can only say—as a per-

sonal contribution—that I was taught by others the vaginal method, and that subsequently I taught myself the abdominal plan of examination, and the more I use this latter method the greater I appreciate its value. The man or woman who employs this method will, I am confident (and such has been the experience with students in maternities), be more accurate in his or her diagnosis, and will rely less and less on the vaginal route. In many confinements during the past few years I have not made a single vaginal examination, as the external plan gave all the information required, and the only thing one cannot yet be sure of is prolapse of the cord when the membranes rupture. If in a normal case an internal examination is to be made at all the best time is just after rupture of the membranes. I regret very much that in the "Directions to Midwives," framed by the Central Midwives' Board, no reference at all is made to the importance of abdominal palpation, although candidates are required before being admitted to an examination (pages 8 and 24, Rules of Central Midwives' Board) to produce a certificate certifying that they have attended and watched the progress of not fewer than twenty labours, making abdominal and vaginal examinations during the course of the labour, and personally delivering the patient: and among "Duties to Patients," No. 8 (p. 15), "no more internal examinations should be made than are absolutely necessary," is ambiguous, as it raises, without answering, the question, How many are absolutely necessary? and, by omitting any notice of the abdominal method, it tends to emphasise the fact that the vaginal examination is the only method to be employed. I now meet often at confinements nurses who are wonderfully skilful in abdominal palpation, and personally I prefer to recommend to my patients midwives who make no vaginal examinations. Dr. Purefoy, whose term of office as Master of the Rotunda ended on October 31st, 1903, and who very kindly supplied me with the statistics from that institution, writes me: "In most of the cases in the hospital *no* vaginal examination is made; in some, *one* is made. Where necessary, of course, this is repeated." I am not prepared to deny that a woman

who has never been examined at the time of her confinement may subsequently develop sepsis. I have seen such cases, and Dr. Purefoy tells me that at the Rotunda "in some of the fatal septic cases no vaginal examination had been made before the trouble arose"; but such cases are extremely uncommon, and may be due (1) to the introduction of the gonococcus shortly before labour; (2) contact by the patient's fingers touching the genitals; (3) contact with dirty clothes or a dirty bed; (4) Whitridge Williams' account of the bacteriology of the inner surface of the labia minora and hymen shows how easily a wound there in a natural labour might allow pathogenic organisms to enter. Still, admitting all this, the results of modern maternity hospitals show beyond question that vaginal examinations are the main source of puerperal infection.

II. Nurses and students should be taught more and more clearly the cause of puerperal infection—viz., that it is introduced from without, and also the importance of keeping themselves and the patient aseptic, and how extremely easy it is for the disease to be introduced.

III. It should be clearly recognised that in at least 75 per cent. of the cases labour is a natural process not to be interfered with, and that, as has been well stated by a recent writer (Edgar):—"The whole process of labour, properly considered, is a conservative process, the tendency of which is to prevent sepsis, and it should be our aim not to thwart this process or supplant it by methods of art, but to follow and aid it, interfering only when, for one reason or another, the resources of nature prove inefficient." It was a well-known saying of the older school of obstetricians that "meddlesome midwifery is bad," and surely vaginal examinations, unless when clearly indicated, the uncalled-for use of the forceps, early rupture of the membranes, douching unless under very special circumstances, and any interference with the third stage of labour (such as manual removal of the placenta), are all examples of meddlesome midwifery. When, however, interference is necessary during the course of labour, the same precautions should be taken as regards patient,

instruments, and our hands and arms as are now employed in abdominal operations. Attention has been drawn by several writers recently to the midwifery bag as being a "weak point in the obstetric defence of the woman in labour against the assaults of sepsis" (Ballantyne). I can recommend the following plan, which I have used for the past five years with the best results:—After the use of the forceps or any other instrument they are carefully washed with soap and water and a nail-brush, dried and rolled up in a towel or paper, and brought home without being replaced in the obstetric bag. They are subsequently sterilised at home by boiling, dried with a sterilised towel, and placed in a sterilised bag, which is put in the large midwifery bag. When required at a confinement they are taken out of their own sterilised cover and placed in boiling water before being used.

There are three other precautions which are of considerable importance as preventing indirectly the occurrence of puerperal infection:—

1. The careful general examination of pregnant women is important, so that at an early date we may detect a flaw in any of the organs (heart, kidneys, lungs), the knowledge of which may lead to the adoption of a judicious prophylactic treatment, and so maintain the patient's strength, and health, and resisting power.

2. A few weeks before the expected date of the confinement—especially in a primipara—a careful abdominal examination should be made, so that we may learn the presentation and position of the fœtus, amount of liquor amnii, presence or not of an abdominal tumour, and, if there is the least suspicion of deformity, the pelvic cavity should be measured.

3. The immediate repair of any laceration of the pelvic floor following delivery is a most important point in the prevention of puerperal infection.

Such in brief are the suggestions which, if fully and fairly carried out, would, I venture to hope, soon make a marked change in obstetric practice, and bring the results of private midwifery work more into line with the brilliant records now achieved in properly conducted maternities.

ART. XII.—*Some Remarks on the Epiphyses of the Long Bones, and their Bearings on the Operation of Resection.*[a] By JOHN KNOTT, M.A., M.D., Ch.B., and Dipl. Stat. Med. (Univ. Dub.); M.R.C.P.I.; M.R.I.A., &c.

No surgeon of the present day can afford to ignore the importance of a thorough knowledge of the position, growth, and (final effacement by completion of) ossification of the various epiphyses of the growing human skeleton. And it is interesting to note that it constitutes a department of science which was the very latest to concentrate the serious attention of either anatomical investigator or operating surgeon. The resection of joints is, indeed, an operation of comparative juniority: a rather late invention—or, more probably, a re-discovery of knowledge and practice which had been lost during the middle ages. Before the discovery of the methods of general anæsthesia, the operation of resection was far too prolonged a process of torture to permit a possibility of its wide diffusion. And during the period which elapsed between the introduction of anæsthesia into surgical practice and the employment of antiseptics, the opening of the large joints—especially that of the knee, for which the operation was most frequently indicated—proved far too dangerous to limb and life.

The net result of the conditions associated with resection of joints in pre-anæsthetic times was that the great object of the operator was to hasten through the steps of the procedure with the maximum degree of velocity. Accordingly, the details were mostly swept over in darkness; while digital dexterity and rapid utilisation of rule-of-thumb were the factors which were most conducive to the consent of the patient, the recognised brilliancy of the procedure, and even to the degree of its ultimate success. No thought, or very little, was taken for the position of epiphysary lines—even for a considerable time after their overwhelming importance with regard to determination of osteal longitude had become a recognised item of physiological anatomy.

[a] Read before the Section of Surgery in the Royal Academy of Medicine in Ireland, on Friday, May 6, 1904.

The growth and development of the osseous system constituted one of the latest domains of anatomical investigation. It is of essentially modern origin; a characteristic study of the age which had learned to utilise the microscope, and had learned to formulate the facts of the associated science of embryology. The practice of even crude dissection of the human body was very limited during the middle ages, as all who possess an even elementary knowledge of the history of our profession must know. It cannot be said to have borne ripe fruit before the days of Andreas Vesalius, who surely deserves to be credited with the founding of the modern science of (human) anatomy. But, even long after his time, and with comparatively scanty material for investigation, the curiosity (or the energy) of the anatomist seems to have been satisfied (or exhausted) when he had reached the unmoving bed-rock of bone. Penetration of the latter offered no special items of information; nothing more than a few broad and plain facts, which could be transmitted from hand to hand with the greatest possible ease.

The limitation of osteological acquirement in the older centuries are strikingly shown by such items as:—

The prevailing popular belief that every man had a rib less than a woman, which the famous author of the "*Religio Medici*" thought it desirable, so late as the year 1672, to try to confute. His discussion of the subject opens with the following paragraph, which throws an interesting side-light on the scientific thought of that date—especially when the reader remembers that it was written by the most accomplished British physician of his generation:—"That a man hath one rib less than a woman is a common conceit derived from the history of *Genesis*, wherein it stands delivered, that Eve was framed out of a rib of Adam; whence 'tis concluded the sex of man still wants that rib our father lost in Eve. And this is not only passant with the many, but was urged against *Columbus* in an Anatomy of his at *Pisa*, where having prepared the skeleton of a woman that chanced to have thirteen ribs on one side, there arose a party that cried him down, and even unto oaths affirmed, this was the rib where-

in a woman exceeded. Were this true it would ocularly silence that dispute out of which side Eve was formed; it would determine the opinion of Oleaster, that she was made out of the ribs of both sides, or such as from the expression of the Text maintain there was a plurality of ribs required; and might indeed decry the parabolical exposition of Origen, Cajetan, and such as fearing to concede a montrosity, or mutilate the integrity of Adam, preventively conceive the creation of thirteen ribs."

The idea of a mysterious power of resistance and survival possessed by some specimens of the tissues of the human skeleton is illustrated in the classical traditions regarding the incombustibility of the great toe of Pyrrhus, which is treated with respect by authors of such attainments and intellectual powers as Plutarch and the elder Pliny. Of far deeper and wider interest is the notion which survived down to modern times, and which may be traced backwards to Jewish, if not to Egyptian, source of thought, of the indestructibility of the terminal segment of the skeleton of the human spine. This was the *resurrection bone*—whose presence was necessary to the future re-clothing of the skeleton with a fleshy body, and the realisation of the vision of the prophet Ezekiel before entrance into a future life. The belief is embalmed in human, and indeed in all vertebrate, anatomy by the familiar name of *os sacrum*. Its influence at a period of less than three centuries ago is shown by the biographic fact that Riolan, the famous professor of anatomy in Paris—the contemporary of William Harvey, and the most ardent and skilled of the opponents to his teaching regarding the circulation—felt so much exercised by his unsatisfied curiosity on this head that he was driven to pay a formal visit to the public executioner for the purpose of asking this very important functionary whether *he* had observed in his extensive experience of the combustion of (live) human bodies, that the ultimate osseous item of the spinal column was really fire-proof!

Quite as convincing, if not actually so startling, a proof as the above is furnished by the way in which the human pelvis was placed in the artificial skeletons of former times.

And even the anatomists of the past generation in Dublin—when Dublin possessed the foremost school of anatomy in the world—who enriched anatomical science with the rarest and most exquisite specimens of anatomical work that the world has yet seen, were for the most part rather careless about the minutiæ of osteology.

The progress of embryology—a science of entirely recent origin—demonstrated the importance of the epiphyses in the economy of the skeleton. And the introduction of the practice of resection of joints into the surgery of recent times was the means of impressing all operators with their influence—especially in the growth of the limbs. This was, however, but a gradual process. Before the introduction of general anæsthesia into general practice, the operation of resection, as already observed, was far too prolonged a process of torture to become very widely diffused.

The net result of these influences in practical surgery was that the operation of resection in the older days was rushed through as rapidly as possible—"in hugger-mugger"—and, as a necessary consequence, was carried out mostly by rule-of-thumb, and almost in the dark. While such circumstances continued to exist, the practical importance of epiphyses remained still unrecognised; indeed, as I have already indicated, the development of the bones was one of the latest domains of human anatomy to be subjected to scientific scrutiny. But since the blessings of anæsthesia and antisepsis came to render the operation as feasible as it was desirable in the growing limbs of the victims of tubercular disease, the importance of the epiphyses and, more particularly, of the epiphysary cartilages, has by degrees come to be estimated at its true value. The hopelessly unsatisfactory results obtained in cases in which the operation was performed for the relief of disease which had involved one or more of the epiphysary cartilages—in the neighbourhood of the knee-joint especially—soon impressed upon practical surgeons the importance of these structures in a diseased, as well as in a healthy, limb.

Having utilised the opportunities of my anatomical

days in the collection of a very large number of bones which show the still ununited, or but partially united, epiphyses, I was led, by hearing the brilliant communication made to the Surgical Section of the Academy by Mr. Tobin on the subject of the excision of joints, to think that it might be of interest to some of the Fellows and Members to have some of my specimens brought before them. All my hearers know how rarely good specimens of epiphysary bones are met with. The bones of fœtal and early infantile existence are easily obtained from the hospital, and those of the advanced periods of life from the dissecting-room; but members of the human family are rarely found to leave their bodies unclaimed between the ages of twelve and twenty-two—a period which forms the important section of life in regard to epiphysary demonstration.

Turning now to the special bones, we may begin with the clavicle, which, as every first year's medical student learns within the initial week of his curriculum, is not a typical long bone, since it has not a (complete) medullary canal, and presents but one terminal epiphysis. (In this connection I may observe that I consider it entirely unnecessary to mention dates for the appearance of ossific centres—which necessarily vary somewhat with the individual—except in a few special instances; or to make special reference to the features of intracartilaginous or intramembranous development of bone—which, as discussed from another standpoint, would elicit some interesting items of information regarding the growth of the clavicle itself.) The macroscopic peculiarities of the ossific centres of the collar-bone are specially connected with its chronology; for the centre of the diaphysis is usually the first to appear in the skeleton, and the union of its solitary epiphysis is the last to take place. The peculiar tenuity of this unique epiphysis is such as to render the preservation of any portion, or even of its subjacent epiphysary cartilage, in the operation of excision of the sterno-clavicular articulation for well-pronounced disease, an utter impossibility. The association of ideas due to similarity of structure, which is so prone to stimulate even

the unintellectual memory, must be held accountable for the existence of a "tip" which was well recognised in the School of Surgery of the Royal College of Surgeons in Ireland in my student days; and owed the popularity of its currency to the fact that it formed one of the surest passports to the favour of one of the most important examiners in anatomy and surgery. This statement of super-subtle professional information was to the effect that the general appearance of the interarticular fibro-cartilage of the temporo-maxillary articulation was like that of a "battered sixpence." Every one who knows the latter knows that it might with as much truth be said to resemble *Nelson's pillar*. But this epiphysis does certainly resemble, in outline and thickness, the used-up coin in question; and the fact that it is so seldom seen led to a confusion regarding its position, which became gradually converted into a dislocation by the presence of a corresponding inter-articular fibro-cartilage. This joint presents also special interest to the comparative anatomist; as this sternal epiphysis is believed by some authorities to represent a human præ-coracoid, while the inter-articular fibro-cartilage does the omo-sternum.

Passing to the long bones of the upper limbs, we find the upper epiphysis of the humerus—formed by the coalescence of its two (or three) centres of ossification—limited by the epiphysary cartilage, which forms a small segment of a hollow sphere, whose convexity is upwards, and whose circumferential margin occupies a horizontal plane when the limb is held in the vertical position. On the inner side it approaches the obliquely-placed articular cartilage: it is only there that its presence need be remembered in connection with the operation of excision of the joint. The lower epiphysis of the humerus has till very recently been known only to the inquisitive few. It was wrongly described in all the anatomical text-books used in my student days; and all the surgical ones emphasised the anatomical blunder by giving it a supra-condyloid position, and informing their misguided readers that the obscure "epiphysary fracture" which sometimes occurs here in early life could always be distinguished from dislocation

of the elbow-joint by the fact that the condyles moved with the lower fragment. Indeed, the most misty views of the position of this "epiphysary line" prevail even in the text-books of the present day. X-ray specialists have, of course, seen it; and Poland's excellent monograph on the epiphyses describes and figures it; but this knowledge has but very slowly percolated through the other strata of teachers and practitioners. The fact is that, if we are fortunate enough to procure a humerus at the proper age, we find that three of the four ossific centres which develop at the inferior extremity of this bone are just coalescing to form a thin encrusting layer of bone moulded over the lower end of its shaft, in a curve adapted to that of the articular cartilage: while the fourth is sheering off to form, during a short period, a minute separate epiphysis for the internal epicondyle, before its final junction with the shaft. The result of this arrangement—in connection with epiphysary fractures—is that such accident produces but an extremely slight diminution of the prominence of the external condyle in any case; while it removes the small tip of the internal epicondyle from the shaft, or not, according as it takes place before or after the separation of its ossific centre, from the rest of the epiphysary plate. In short, in the occurrence of the epiphysary fracture of the lower end of the humerus, the lower fragment carries with it but a minute portion of the external epicondyle, while it removes either the small projecting tip of the internal epicondyle, or—more probably—none at all, according to the age of the patient.

The extreme thinness of the stratum between the articular cartilage and the epiphysary cartilage in this position renders it, of course, absolutely impossible to remove more than a thin articular slice from the lower end of the humerus without removal of the epiphysary cartilage itself—and consequent arrest of longitudinal growth at the lower end of the bone.

The upper extremity of the ulna presents an epiphysis of considerable vertical extension. It also presents, what I have never seen described in any work on anatomy, a supplemental epiphysis placed above the main one,

occupying the position of the insertion of the triceps tendon, and presenting the general appearance of a Lilliputian patella. This introduces a hitherto unrecognised item of homology between the knee and elbow joints.

The upper epiphysis of the radius is of moderate thickness, and limited by a horizontal epiphysary cartilage. The same words may be applied in a description of the lower epiphyses of both radius and ulna.

Descending to the lower limb, we find the femur presenting three epiphyses at its upper extremity and one at its lower. There is one for each trochanter, but they are of little surgical importance. That for the head is much thinner than is usually thought. It is little more than an articular meniscus, adapted to the articular cartilage, and somewhat thicker in the centre than at the margin. Accordingly, it is not possible to remove the entire articular lamella of bone by a plane section at this extremity without involving a portion, at least, of the epiphysary cartilage.

The epiphysis of the lower end of the femur is a very large one, and leaves ample scope for the excursions of the operating surgeon. And it possesses the most engrossing interest in connection with the longitudinal development of the limb. Its ossific centre is generally the only one to form within an epiphysis during intra-uterine life; and, as it normally appears within the last week or two of that important period of existence, its presence is the most reliable item of evidence of the maturity of the fœtus which can be procured in a doubtful or disputed case. Then the union of this epiphysis with the shaft of the femur is the latest of any of the bones of the limbs. And, as growth proceeds while the epiphysary cartilage remains unossified, the future gigantism or dwarfism of the (otherwise normal) individual accordingly depends more upon the behaviour of the epiphysis of the lower end of the femur than upon that of all the other segments of the human skeleton. This fact was impressed upon me with peculiar vividness by a personal experience of a night spent in the Holyhead railway station a good many years ago. I had arrived by the Euston train about 10 p.m., and the Dublin boat did not

start till the early morning. Everybody soon retired for the night, and I found myself alone in the small waiting-room with no less a personage than "Barnum's *long man*," the giant of 7 feet 10 inches, who had long formed one of the special attractions of the famous showman! I was then in rather poor health, and I confess that I felt rather shy of my company—even nervous. I had had before that time a large experience in the professional training of medical students. These always form, as is well known, a very representative section of the youth of our community, which is one of exceptionally good physical development. I had then arrived at the close of my "coaching" career; and, as one of the most vivid impressions which it had left upon me was that of the fact that the biggest medical student who had ever passed through my hands, during a prolonged and varied experience, was also the biggest blackguard, I felt somewhat loath to avail myself of an opportunity of intimacy with any individual of exceptional osseo-muscular development. However, I soon found that I might have spared myself my anxiety: my waiting-room acquaintance was as gentle as a child: he was splendid company—as chatty and communicative as could be wished: and, having been all over the civilised world there was plenty of material for conversation forthcoming. The net result was that I spent on that occasion one of the pleasantest nights I can remember. And I also utilised the opportunity of observing the relative proportion of special development of the segments of the skeleton. He was (approximately) 2 feet 1 inch taller than I was: yet, as I sat beside him, his knee did not reach more than three inches higher than mine from the floor, and his head did not seem to reach more than 6 or 7 inches above mine. But I believe that his femur was fully fifteen inches longer than mine. As is, I believe, invariably the case, the mainspring of his gigantism lay in the epiphysary cartilage of the lower end of his femur: and, in the good old Fabian style, the victory was, in this (and every corresponding) case, obtained by *delaying*.

The upper epiphysis of the tibia forms a comparatively thin lamina; so that it would not be possible to save a

portion in excision of the knee-joint, if this part of the bone were at all deeply diseased. An examination also at once shows the utter impossibility of making a conical pit or an angular groove in the head of the tibia for the better fixation of the lower end of the femur after resection, without removal of the greater portion, at least, of the epiphysary cartilage. The lower epiphysis of the tibia is thicker, in proportion to its horizontal dimensions, than the upper.

The epiphyses of the fibula are among the seldomest seen. They are rather deep, a feature correlated with the general outlines of the diaphysis of this bone. That of the lower extremity is, of course, noted for its breach of the osteological commandment—to the effect that: "That epiphysis of a long bone towards which the nutrient artery is directed, shall be the last to ossify, and the first to unite with the diaphysis." The lower epiphysis of the fibula breaks the first part of this command; it ossifies first—perhaps acting under the influence of a secret suggestion from nature for the purpose of supporting the toddling infant.

ART. XIII.—*Burning Foot or Erythromelalgia Tropica.* By P. N. GERRARD, M.D. Univ. Dubl.; District Surgeon, Sĕlangor.

Definition.—A disease of the plantar nervous or arterial supply which occurs in Eastern natives accustomed to work barefooted on roads and plantations. This disease, which is fairly common in the Malay Peninsula, chiefly in the persons of Tamil labourers upon coffee plantations, commences usually with a "pins-and-needles" sensation affecting the soles of the feet. It then progresses to an acute burning sensation, which is in the majority of cases so severe as to prevent the patient walking, and frequently necessitates the administration of narcotics to produce sleep (which becomes quite impossible in severe cases). In some cases the patient is enabled to walk upon the heels with the aid of a stick, in some others no progress nor attempt can be made. In addition to six cases on which

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LIQ: COLCHICINÆ SALICYLATIS

Gives Immediate Relief in all Cases of RHEUMATOID ARTHRITIS, CHRONIC RHEUMATISM, GOUT and LUMBAGO.

Each fluid drachm contains $\frac{1}{32}$ grain of Salicylate of Colchicine.

HOPKINSON'S LIQUOR COLCHICINÆ SALICYLATIS (Baiss Brothers and Stevenson, Ltd., 4, Jewry Street, London, E.C.)—For the treatment of that elusive condition called gout no drug is so uniformly successful as colchicum. Every practitioner knows that success is not invariable, and, we think, for reasons not so obscure as may be imagined. In the first place the corm, or seeds, does not contain a constant proportion of alkaloid, and the method of extraction is not always equally efficient. No doubt standardisation will improve matters in the future, but we think the best means of securing the proper action of the drug is to administer the active principle—the alkaloid-colchicine. Hopkinson's Liquor Colchicinæ Salicyl contains $\frac{1}{32}$ of a grain of the salicylate of colchicine in a drachm. This is not a mixture of salicylic acid with the alkaloid, but a definite chemical compound GIVING RESULTS MUCH MORE CERTAIN THAN THOSE OF ANY PREPARATIONS OF COLCHICUM. For gout, chronic rheumatism, and rheumatoid arthritis it is a valuable acquisition, especially as it does not interfere with the action of the kidneys and liver, and does not produce any depressing effect. The liquor is a convenient and elegant preparation. "*Medical Review.*"

♣♣♣♣♣

DOSE.—A TEASPOONFUL DILUTED, TWICE A DAY BETWEEN MEALS.

PRESCRIBE—Liquor Colchicinæ Salicyl (Hopkinson's).

TESTIMONIALS.

Eastwood, April 29th, 1893.

Dear Sirs,—I have now prescribed your **Liquor Colchicinæ Salicyl** for several months **with marked effect in every case.** Before it was brought under my notice in the *Lancet*, I never prescribed the ordinary remedies with any confidence. Your spécialité, however, gives me the utmost satisfaction, and I can confidently recommend it to my brother practitioners. It has no depressing effect on the heart.

I am, dear Sirs, yours faithfully,

—— ——, M.R.C.S., Eng.

Pleasley, Mansfield, May 18th, 1893.

Gentlemen,—I have much pleasure in testifying to the great benefit I have experienced from the use of your **Liquor Colchicinæ Salicyl** in my own case for lumbago. During the 18 months I have used it (for three separate attacks) it has **not failed me once.** I have **always experienced relief** within half-an-hour of the time of taking the first dose, and three or four doses have invariably succeeded in subduing the attack, and that without causing any unpleasant effect whatever, or even necessitating confinement indoors. I regard it as a valuable remedy for this and similar complaints. I shall take care to have it by me for personal use, and shall prescribe it to my patients.

Yours faithfully,

—— ——, M.B., C.M. (Univ. Aberd.)

Great Grimsby.

Dr. Smith would be much obliged if Messrs. Hopkinson & Co. will send him, for his own use, another bottle of **Liquor Colchicinæ Salicyl. He has derived great benefit from it.**

London, W., May 15th, 1893.

Dear Sirs,—I have found your **Liquor Colchicinæ Salicyl** of great value in my own case. I was soon quite relieved from pain, after having been ill for a long time with rheumatic gout. I have prescribed and recommended it to a great many people since, **and have heard good results in every case.**

Yours truly,

—— ——, F.R.C.S., Eng.

Extract from the "BRITISH MEDICAL JOURNAL."

"A preparation which is said to be very successful in the treatment of Chronic Rheumatism, Gout, and Lumbago, is prepared under the name of **Liquor Colchicinæ Salicyl** (Hopkinson); 60 minims diluted contain $\frac{1}{32}$ of a grain of Salicylate of Colchicine.

Oldfield, Bath, 22nd Dec., 1897.

I have chosen a good opportunity for a trial of your **Liquor Colchicinæ Salicyl. The beneficial effect was almost instant** and yet was enduring. There was no nausea.

Plymouth, 15th Jan., 1902.

Liquor Colchicinæ Salicylatis has recently given **very good results** in a troublesome case of gout, which had been under the usual treatment for some weeks. It has answered admirably in my hands, I shall always use it.

London, 26th May, 1902.

Thanks for **Liquor Colchiniæ.** I have taken two doses and can now walk properly, which I have not been able to do for about a month.

Mist. Bismuthi Aromat. (BAISS)

THIS valuable remedy has been much appreciated by the Medical Profession, for the past 32 years. It is useful for Dyspepsia, Gastric Distress, Impaired Digestive Powers, and Gastrodynia. It is an elegant compound, very palatable, *retained by the most enfeebled patient*, and has no precipitate. The component parts are on every label—it is no secret formula. Each teaspoonful contains 1½ minims Acid Hydrocyanic B.P., $\frac{1}{32}$ grain Morphia, 6 minims Tinct. Nucis Vom. with Bismuth, in its most efficacious form and Chloroform.

Dose.—One fluid drachm.

Sold in 1 lb. bottles 4/-, 2 lb. bottles 7/9, 4 lb. bottles 15/- each.

PRESCRIBE—Mist. Bismuthi Aromat. (Baiss.)

Mist. Bismuthi Aromat $\bar{c}$ Pepsin.

(BAISS)

Is identical with above preparation, with the addition of 2 grains Pure Pepsin Porci in each fluid drachm.

Dose.—One fluid drachm.

Sold in 1 lb. bottles 4/6, 2 lb. bottles 8/6, 4 lb. bottles 16/- each.

EXTRACT FROM THE "PRACTITIONER," July, 1903.

"The Treatment of Gout in its various forms,"

By A.-P.-L., M.D., BSc., F.R.C.P., etc.

"As regards the use of lithium-salts in the treatment of gout, my opinion is that they are not so useful as the potassium- and sodium-salts. The lithium-salts have not the same inhibiting effect on the conversion of gelatinous sodium biurate into the crystalline form as the potassium-salts have, while at the same time they have no better solvent effect on gouty deposits. The great objection, however, to the use of the lithium-salts is their greater toxicity and depressing action on the heart as compared with the potassium-salts. They consequently have to be given in such small doses that I am very doubtful as to whether in such doses they possess any remedial effect at all. On the other hand, I constantly meet with patients suffering from cardiac depression as the result of the excessive and continued consumption of lithia-tablets, which are so persistently, so speciously, and so wrongly vaunted as curative of gout."

this paper is based I have seen one case in the person of a Chinese, who I regret to say died of dysentery before any presentable history of his burning foot could be obtained.

One point which has struck me in the collection of these cases is that although a previous history of malaria can usually be obtained, of the time previous to the incidence of the erythromelalgia, if such it be, no history of malaria occurring during the progress of the burning foot can be found in any of the cases which I have met. The possibility, therefore, that such cases may be neuritis of a malarial origin in which the blood supply to the nerves implicated may have become cut off by means of a deposit of malarial pigment, seems to me a possibility worthy of some consideration The disease, occurring as it does in dark-skinned races mostly, obscures to some extent the swelling and redness described by Dr. Savill in his article on "Erythromelalgia" in the *Lancet* of June 1st, 1901, and to which article I am indebted for the proper placing of these cases under the heading which I have chosen above. The duration of the disease in the cases under consideration has been variable, and no final results can be given, as my transfer from the district wherein these cases occurred took place almost immediately after my interest had been raised in them.

Duration of Case I. at the time he was seen was 3 days
" II. " " 3 months
" III. " " 15 days
" IV. " " 3 months
" V. " " 2 "
" VI. " " 10 days

from which statements a chronic course may rightly be argued for the disease. That the affection is not any form of acute local disease occurring in a given place after a fixed incubation period may, I think, be fairly argued from Cases I., III., and VI., for we find that these cases had been in the country for three and a half years, eight months, and one and a half years, respectively, and had only suffered from the disease—Case I. for three days, Case III. for fifteen days, and Case VI. for ten days. From these

premises may also fairly be deduced the fact that length of residence in *this* particular country has no influence in the production of the disease.

In two out of the six, sugar was present in the urine. The appearance of the feet and toes is not by any means extraordinary, but on close observation I believe that in the majority a certain variable amount of swelling is present, and in one (the youngest, Case II.) I believe slight sclerodactylia also. Tremor was not observed in any of the cases.

Affecting—as the tropical form of the disease does—the soles of the feet and the toes, the actual amount of congestion or true thickening present, and its behaviour under varying conditions with regard to the force of gravity (as has been noted by Dr. Savill), is difficult to state, and I am inclined to the view that, in the case of this tropical affection, the disease does not exist in the congestive form so much as in the cellulitic. That the disease, however, in its earlier phases (before the Government hospital is sought, which is usually late in every case) may and probably does commence as the congestive variety is, I consider, extremely probable, and that, by means of the bruising and high ground-temperature to which the soles are exposed on open plantations, a plantar cellulitis is rapidly induced in the tropical form, in which form therefore it comes under one's observation.

Regarding Dr. Savill's hypotheses as to causation—eliminating the suggestion of its malarial origin, which I believe worthy of further investigation—*arteriole fatigue* must be considered as an extremely probable factor in the tropical cases. The duties of coffee-estate coolies lead them barefooted out into the morning mists, when the upturned soil is clammy, damp, and comparatively cold, at 6 a.m.; they work on during the rising morning until 9.30, at which time they "break off" for an hour. Their next "spell," from 10.30 to 1 p.m., is on the burning soil, which is, however, during the earlier hours interrupted at intervals by cold patches of earth shaded by the still slanting rays striking the coffee-bushes. The next shift is

usually from 2 to 5 p.m., during which there is no respite for the sole from the burning earth.

Paralysis of the sympathetic need not, I consider, be gone into in these tropical cases.

Excitation of the vaso-dilator nerve fibres need not be called upon to share the responsibility in these cases, as the converse—namely, fatigue paralysis of the vaso-constrictors—is from the nature of the patient's employment much more probable and understandable.

General toxic vasomotor derangement would surely be more widespread in its effects! Added to which the histories of the six cases show no abnormalities of digestion or neurasthenic phenomena. Acro-paræsthesia is not uncommon in these cases, as already stated. I trust that I have made clear in the above statement the fact of the acuteness of the pain experienced. In the cases in which the knee-joints were synchronously attacked I have been obliged, for want of a better reason, to put this symptom down to concurrent rheumatism. I have not met any of the "flushings" and "vertiginous" attacks in the cases reported. I should mention also the fact that an extreme dryness of the plantar skin is undoubtedly present, pointing further to the cellulitic hypothesis.

The treatment adopted in my cases has been very varied; narcotics and sedatives of all kinds naturally only relieved the disease for the period of their action. Some relief was obtained in two cases by immersion in hot water containing a quantity of salt. Various liniments and ointments were unsuccessfully tried, and general tonics, with or without strychnin, also failed to give permanent relief. Calcium chloride was not exhibited, but I hope to report upon its action at some future time.

ERRATA.

Parasitic Anæmia.—In the Journal for August 1, 1904 (Vol. CXVIII.), page 155, line 4, for "M. A. Manouoriez," *read* "M. A. Manouvriez"; line 6, for "book-worm," *read* "hook-worm."

PART II.

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

A Manual of Practical Medical Electricity, the Röntgen Rays, Finsen Light, Radium and its Radiations, and High-frequency Currents. By Dawson Turner, B.A., M.D., F.R.C.P. Ed.; M.R.C.P. Lond.; Lecturer on Experimental Physics, Surgeons' Hall, Edinburgh; Medical Officer in Charge of the Electrical Department, Royal Infirmary, Edinburgh. Fourth Edition, Revised and Enlarged. London: Baillière, Tindall & Cox. 1904. Demy 8vo. Pp. xxiii + 435.

In the number of this Journal for April, 1903 (Vol. CXVII., page 291), we expressed a very favourable opinion of the third edition of Dr. Dawson Turner's manual.

The whole book has been carefully revised since that time, but the most extensive changes will be found in Part VI., on the Röntgen X-rays It has been re-arranged and expanded into five chapters, of which the first two are devoted to the X-rays. In Chapter III., on the Finsen Light, Becquerel's discovery of the radio-activity of uranium in 1896 is referred to, and the marvels of the radium radiations are unfolded. At the close of this chapter, also, mention is made, in terms of prudent reserve, of Blondlot's N-rays. According to Blondlot and Charpentier, the human tissues appear to possesss the property of emitting rays which may increase or diminish the luminosity of a phosphorescent screen or of an electric spark. As these rays are chiefly emitted by the muscles and nerves when physiologically active, it is suggested that they may serve to outline these tissues and to aid in the localisation of tumours of the brain.

In Chapter IV. the therapeutic applications of the Röntgen ray, the Finsen light, and radium radiations are discussed.

A new chapter (V.) tells us all that is known of high-frequency currents and their therapeutic application. In the author's opinion, these currents are still upon their trial, and he considers that time alone will show whether they will prove of superior or even of equal efficacy with our older, but less startling, electro-therapeutic methods. These are wise words.

A notable feature in this work is the lavishness with which it is illustrated. More than thirty fresh illustrations have been added in the present edition, which includes 200 figures in the text.

In conclusion, we heartily endorse the sentiments of the author in the closing sentence of his preface, which we re-print:—"The foundation of the Electro-Therapeutic Society, and the increasing interest that the medical profession is taking in medical electricity, lead one to hope that the tide of unqualified electrical practice will at last be stemmed, and that practitioners will awake to the fact that it is both derogatory to themselves and injurious alike to their profession and to their patients to call in instrument makers for radiography and nurses and masseurs for electro-therapeutic treatment."

Surely if a physician or surgeon is too busy to himself undertake radiography or electro-therapeutic treatment there are plenty of well-educated young medical men to whom these necessary aids in modern medical practice could be entrusted to the mutual advantage of both parties, and above all to the benefit of the patient.

A Manual of Pathology. By JOSEPH COATS, M.D.; late Professor of Pathology in the University of Glasgow. Fifth Edition, revised throughout by L. R. SUTHERLAND, M.B.; Professor of Pathology in the University of St. Andrews. With 729 Illustrations and two Coloured Plates. London: Longmans, Green & Co. 1903. Pp. 1287.

AN examination of this fifth edition serves to confirm the opinion expressed, when we reviewed the second edition fifteen years ago, to the effect that "Coats' Pathology"

was one of the best books on the subject that has appeared. The death of Professor Coats, which was such a blow to medical science in the British Isles, and especially in Glasgow, and which occurred before this edition was called for, caused the work of revision to devolve on Dr. Sutherland, who has done his work in a thoroughly satisfactory manner. The chapter on Bacteriology that appeared in former editions has been omitted, as that subject is now so extensive as to call for special treatises; and the space thus gained has been well utilised by the introduction of recent additions to pathological knowledge and by the insertion of 230 additional illustrations.

This work is specially to be commended, because it is by no means a work on morbid anatomy only, but, on the contrary, treats of pathology from a medical and surgical standpoint.

Medical and Surgical Report of the Presbyterian Hospital in the City of New York. Vol. VI. January, 1904. Edited by Andrew J. M'Cash, M.D., and W. Gilman Thompson, M.D. New York: Trow Directory Printing and Bookbinding Co.

This, the sixth, volume of the Reports of the Presbyterian Hospital is much superior to any of its predecessors. It is different to them in character, is more of a medical volume, and has lost those advertising features which disfigured former volumes. It contains seventeen original articles, of which any volume of reports might be proud. If we enumerate some of the contents only it is because space does not permit of our giving them all, and we name those that we think of more than usual interest. Dr. Northrup's paper on the "Rapid Growth of Long Bones," as a suggestive paper, will well repay study. "The Pathological Anatomy of the Shiga Bacillus," by Dr. John Howland, is, we believe, the first paper to give anything like a full description of that organism. "Mal-position of Adrenal Tissue" tells of the enormous strides physiology and medicine have made since Sir Victor Horsley first turned his attention to the functions of the suprarenal

glands. "Paratyphoid Fever" is the subject of an article by Drs. Ingen and Frissell, in which the many difficulties which sometimes attend the diagnosis of typhoid fever are well shown. It would almost make a trained nurse diffident. "Malignant Endocarditis, with a Report on Thirty-two Cases," follows. Happily, this disease is very uncommon. Withal, it is useful to have such an accurate clinical picture for reference. "Extraction of an Intubation Tube from the Right Bronchus" is the report of a very successful operation by which an intubation tube was removed from the first branch of the right bronchus.

Insomnia: Its Causes and Cure. By JAMES SAWYER, Senior Consulting Physician to the Queen's Hospital, Birmingham. Birmingham: Cornish Brothers. 1904. Pp. 66.

THIS little monograph is a separate reprint of the chapters on insomnia in the author's "Contributions to Practical Medicine," and is based on various clinical lectures delivered by him. The style of a clinical lecture is retained, and is somewhat marred, especially in the earlier part, by attempts at "fine writing." After a sketchy account of the physiology of sleep (at some of the statements in which we should be inclined to cavil), the author proceeds to classify insomnia as *symptomatic* (due to pain, fever, dyspnœa, and the like) and *intrinsic* (for which no obvious physical cause can be discovered), with which latter and its treatment the paper is mainly concerned. Cases under this head are subdivided into *psychic*, *toxic*, and *senile*. The first class, which is commoner among men, includes those due to shock and mental overwork, and an admirable general description is given of the latter form, and also of the symptoms observed by Sir James Sawyer to follow persistent intrinsic insomnia. These observations are interesting, and show the existence in such cases of a general state of "irritable weakness" of the nervous system. In seeking to explain the causation of toxic insomnia, too much importance is, in our opinion, assigned to vascular influence, and not enough to the direct action

of the poisons upon the nerve-cell. The second chapter is devoted to treatment, and although not much novelty in detail will be found therein, it is an excellent and helpful broadly-outlined sketch of the methods to be followed, and is especially deserving of commendation for the stress laid upon measures other than hypnotic drugging. The monograph, as a whole, will well repay perusal, and is readably written.

International Clinics. Vol. I. Fourteenth Series. 1904. London: J. B. Lippincott. Pp. 304.

This volume contains a number of clinical lectures similar in scope to those which appeared in former volumes of this series, and which do not appear to us to call for special mention. The latter part of the book contains a review of the Progress of Medical Science during 1903.

Manual of Surgery. By Alexis Thomson, M.D., F.R.C.S. Ed., Assistant Surgeon, Edinburgh Royal Infirmary, Surgeon to the Deaconess Hospital, Edinburgh; and Alexander Miles, M.D., F.R.C.S. Ed., Assistant Surgeon, Edinburgh Royal Infirmary, Surgeon to Leith Hospital. Volume Second, Regional Surgery. Illustrated with 156 Wood Engravings. Edinburgh and London: Young J. Pentland. 1904. Pp. 723.

The volume before us completes the "Manual of Surgery," the first volume of which we recently reviewed, and well maintains the excellence of the teaching our perusal of the first instalment led us to expect. The subjects to which it is devoted are treated in a manner deserving of every praise. Very little is said about the details of operative procedures—a method to be commended in a general surgery. The work will do much to maintain the renown of the Edinburgh school for the practical nature of its teaching as well as enhance the reputation of the authors. Adverse criticism of the work is out of the question, while undue complimentary criticism is uncalled for. We congratulate the authors on their success, and

have much pleasure in recommending the work to every student and practitioner who desires to possess a book which is alike readable and eminently sound and practical in its teaching.

The Calcutta Practitioner. A Medical Journal. Vol. I. No. 2. February, 1904. Calcutta: Printed at the Cherry Press, 10 Cornwallis-street, and published by the City Book Society, 64 College-street.

This modest octavo of 40 well-printed pages has not yet left its swaddling clothes, for there are but two leaves of advertisements found between its covers. We seldom have an opportunity of hailing such specimens of infantile purity; and, accordingly, we welcome its arrival in the world of journalism—rather over-crowded as it already is—with the greatest cordiality. Its stock of matter, although so limited, is well selected; and is all dressed out in a form which does credit to both contributor and editor. The first article, which bears the title of "The Bhowanipore Food-poisoning Case," by Rai Bahadur Chunilal Bose, M.B., F.C.S. (concluded from the former issue), bears strong testimony to the productive efficacy with which the gospel of bacteriological pathology has been preached unto all nations—with its distinctive accompaniments of ptomaïns and toxins. The next contribution is one which we read with an added personal interest. Its heading is—"Effect of Mental Impressions of the Mother on the Embryo, by Haridhan Dutta, L.M.S." The subject is extremely well thought out, and the writer's general remarks on heredity and atavism are a decided improvement on a large proportion of the matter which we have, unhappily, been obliged from time to time to peruse in connection with these much be-written subjects. His remarks on infantile deformities have brought forcibly before our mind's eye the common kinship of the human race. The uneducated peasant woman of the West of Ireland believes, or did believe a quarter of a century ago, that if she saw a hare during her pregnancy she must at once stoop and tear a vertical slit in her petticoat or

chemise, for this is the only available method of transferring the impression of *labium leporinum*, which would otherwise inevitably appear in her offspring! Cases of "quadruplets" (which died within forty-eight hours after birth) and of "spontaneous cure of aneurysm" (popliteal), which followed fracture of the lower end of the femur in a child of seven, conclude the original "contribs." Then there is a good show in the way of "clinical notes," "current literature," "reviews of books," and "current events." Altogether we consider that the *Calcutta Practitioner* has made a good start, and we wish it a hearty "God-speed"!

L'Écho Médicale. No. 321. Septième Année. No. 10. 8 Mars, 1903.

This specimen number of an interesting and well-edited periodical should have been noticed before, had it not become accidentally mislaid among our other exchanges. Among other interesting items, it contains a specially attractive and instructive one bearing the title, "Quelques mots sur le Congrès du Caire. Sa raison d'être. Son utilité. Par M. Davrinche, interne des Hôpitaux." In commenting on this text, the writer points out that while Europe is the Continent of *Scientific Congresses* in special, and claims the lion's share of scientific discovery and scientific research in general, it can by no means lay claim to be the quarter of the world where disease and physical ills innumerable most loudly and frequently call for the alleviating attention and curative skill of the physician. No country in the world had more need of the cosmopolitan medical consultation which only an International Medical Congress can furnish than had Egypt. "*Ces médecins qui sont des timides, qui ont peur pour ainsi dire de communiques aux autres ce qu'ils ont ou se rencontrent surtout en Egypte.*" And he proceeds to point out the patent and universal source of disease in the actual source of its existence. The land of Egypt is, in the language of the "Father of History," *a gift of the Nile;* and the gruesome feature of

its physical history is that the same mighty "Father of Waters" presents the perennial fountain of its terrible plagues. The perusal of this article almost reconciles one to the hurry and scurry of Western civilisation—bad as it is: for it makes us understand the value of the position which we have attained in relation to the gravitating and destructive agencies of the surrounding world, by the slow and painful mastery of physical facts. One is not surprised that Egypt is fertile in cholera, and malaria, and leprosy, and pellagra, and filariasis, and hydatid disease, and all et ceteras, even ophthalmia, when we realise that "*A l'endroit même où on lave le linge, où on conduit boire les bestiaux, les femmes puisent avec leurs amphores, les vendeurs d'eau emplissent leurs outres et vont faire la distribution dans le village ou dans la ville.*"

The Journal of the Irish Medical Association. "To Protect and Promote the Interests of the Medical Profession." Vol. IV. No. 1. January, 1904.

We have here 44 quarto pages of closely-printed matter—all of the greatest practical interest and importance to the Irish medical practitioner. In "A Review of the Situation," which opens the first page, the writer points with an honest pride to the progress made by the efforts of the Association. "Though still far from the accomplishment of all that would make the Poor Law Medical Service a desirable one, yet to those who cavil and are inclined to sneer at our Association we would point out that the few privileges that have been obtained are due entirely to its work, more especially within the last few years. It is grudgingly given, no doubt, in many cases, and hedged round with difficulties, but still we have obtained the right to an annual holiday. The privilege of getting tickets cancelled by the issuer is also the outcome of our exertions. And we have established four guineas a week as the recognised tariff for a *locum tenens*." In commenting on these results, the writer goes on to say that:—"These, indeed, are small gains, and leave the main body of our complaints untouched . . . ": but we think that he could well

afford to take a more encouraging view. The start is always the most difficult part of such an undertaking; the winning of the first outpost is the most risky and the most uncertain, and every new standpoint which is secured can be utilised as a vantage-ground for a new attack on the position of the enemy or the opponent. We are at present living in a levelling and a revolutionary age; learning and scientific attainments command no respect from an "intelligent" public which has been subjected to a process of "intermediate education," and which reads its newspapers every morning; and, accordingly, "knows what's going on" everywhere, and forms opinions of its own on all matters thinkable and printable. We suspect that the only sensory areas discoverable in this myrio-cephalic product are its stomach and its pocket—both included in that of self-interest. When it is led to believe the glaringly obvious truth that it must gain more than it will lose by treating its doctors liberally, it will adopt the latter line of action, not before. We cordially congratulate the Irish Medical Association on the results already attained by their method of persuasion.

RECENT WORKS ON GYNÆCOLOGY.

A Text-book of Gynæcology. Edited by Charles L. Reed, M.D.; Professor of Clinical Gynæcology in the University of Cincinnati, &c., &c. New York and London: Appleton & Co. 1904. Second Edition. Pp. xxv and 900. With 356 Illustrations.

Practical Gynæcology, a Comprehensive Text-book for Students and Physicians. By E. E. Montgomery, M.D.: Professor of Gynæcology, Jefferson Medical College, &c., &c. London: Rebman, Ltd. 1904. Second Edition, revised. Pp. xxxiii and 900. With 539 Illustrations.

It is so comparatively short a time since we reviewed the first editions of these works that it is scarcely necessary to do more on the present occasion than note the appearance of the new editions. Both books have been thoroughly revised and brought up to date, and a considerable number

of new illustrations have been added. Professor Reed's book is well known, and appears to us to be an admirably full and complete work on gynæcology. Although it is written by a number of authors, the editor has welded it into a homogeneous whole, and has gone far to overcome the difficulties which surround the production of a composite work. In addition to numerous American writers, the names of Ballantyne, Cameron, Robson, and Sinclair appear in the list of contributors. We can cordially recommend the book to both general practitioners and specialists.

Montgomery's work was not reviewed by us in so favourable terms on its first appearance, and, though it shows signs of careful revision, we still hold a very similar opinion regarding it. The illustrations are extremely good, but the work itself is too discursive. It contains a large amount of information, but its arrangement militates against the ready assimilation of the latter.

A Manual of Surgical Diagnosis. By JAMES BERRY, B.S., F.R.C.S.; Surgeon to, and Lecturer on Surgery at, the Royal Free Hospital; formerly Surgical Registrar and Demonstrator of Anatomy, of Operative Surgery, and of Practical Surgery at St. Bartholomew's Hospital. London: J. & A. Churchill. 1904. Pp. 363.

THIS little book is intended mainly for dressers and junior practitioners. The author quite recognises the utter futility of attempting to deal fully with every detail of surgical diagnosis, and has wisely contented himself with giving the principles involved and the methods of examination that ought to be adopted. Most emphasis is laid on those points he considers, from his own practical experience, of most importance and of most value. The book is divided into three parts, of which the first part shows fully and concisely how the student should approach a case with a view to diagnosis, the method of taking the history, the physical examination to be made, and the methods of doing so.

As far as it goes, the book is sound in its teaching, and

when used in connection with practical demonstrations of its principles in the wards of the hospital or out-patient department it will, we have no doubt, be found serviceable.

Le Ventre. Étude Anatomique et Clinique de la Cavité Abdominale au Point de Vue du Massage. Le Rein. Par le Dr. M. Bourcart. Ouvrage, illustré de 134 figures. Paris: F. Alcan, Éditeur. 1904.

The present volume of this work is one of three, the first of which deals with the normal and abnormal positions of the kidneys and the influence of massage in correcting malposition and functional troubles of those organs. A good deal of the letterpress and many of the illustrations are taken up with the typography of the viscus and the different methods of examining it through the abdominal walls. Massage is highly recommended as a therapeutic remedy, but only when performed by the physician; as done by the trained nurse, ignorant of anatomy, the author considers it more injurious than otherwise. The work is a very valuable addition to the literature of kidney malposition and massage.

The Pathology of the Eye. By J. Herbert Parsons, B.S., D.Sc. (Lond.); F.R.C.S. (Eng.); Curator and Pathologist, Royal London Ophthalmic Hospital. London: Hodder & Stoughton. 1904. 8vo. Pp. 388.

We have the first volume of this work to hand, and, having read it, we have no doubt that when the work is completed ophthalmology will be much enriched. Mr. Parsons is handling his subject in a most attractive style, placing before us his views and those of the best workers in this department in a clear and impartial way.

It is pleasing to see British work so fully acknowledged—a feature that does not characterise Continental works. The section on Trachoma—a difficult topic—strikes us as being very thorough and up to date.

The author is to be congratulated on the result of this first instalment of his efforts to place before the ophthal-

mological world a thoroughly complete work on eye pathology. To ophthalmologists in general the work must be interesting reading, and to those concerned with eye pathology in particular it will be invaluable.

Messrs. Hodder & Stoughton, the publishers, have left nothing to be desired.

Catalogue Général et Bibliographie Méthodique. Médecine, Histoire Naturelle, Agriculture, Art Vétérinaire, Physique, Chimie, Industrie. 1904.

A GENERAL catalogue of scientific books has just been issued with the above title by the eminent Paris firm of publishers, J. B. Baillière et Fils. It includes the names of the authors of about 5,000 works, arranged in alphabetical order. The latter include standard manuals and books of reference on *medicine, natural history, agriculture, veterinary science, physics, chemistry, technology, industry,* &c.; and gives the date of publication of each, with the size, number of pages, of figures, and of plates. "A table methodique" of 17 pages gives, besides, the names of the principal authors who have written on more than 1,500 subjects connected with the various sciences. This bibliography will unquestionably be found of the greatest value to all scientific workers. It will be forwarded, gratis and post free, to readers on application to the publishers, MM. J. B. Baillière et Fils, 19 Rue Hautefeuille, Paris.

The Medical Attendance of Londoners. An Economical Study of Medical Relief, freed from existing abuses, and adequate to protect all classes and interests. By SIR HENRY BURDETT, K.C.B. A speech made at the annual meeting of the Portland Town Free Dispensary, held at the De Walden Institute, Charlbert-street, St. John's Wood. London: The Scientific Press, Limited. 1903. 8vo. Pp. 20.

SIR HENRY BURDETT explained his appearance and speech at a small dispensary by telling his hearers that:—"After all, the dispensaries of London, which are amongst the

oldest institutions in the metropolis, have done for more than a century most useful work, and they have this great merit, that they have never departed from the principles upon which they were originally founded—that they should be maintained and managed for the poor." And the key-note of his able and business-like speech is given in the concluding paragraph:—"I cannot do less than congratulate the managers of this free dispensary that they have established in this district a system whereby every patient who comes here is seen if urgently ill, and then handed on to a small committee to ascertain whether the patient is able to pay or not." The business-like fair play which is expressed in this sentence is much more to be admired than its English grammar. How greatly would the establishment of such a principle throughout Ireland—if properly carried out—improve the position of the medical slaves of the poor-law guardians!

Atlas and Epitome of Operative Gynæcology. By Dr. Oscar Schaeffer, Privatdocent of Obstetrics and Gynæcology in the University of Heidelberg. Authorised Translation from the German, with Editorial Notes and Additions. Edited by Clarence Webster, M.D., F.R.C.P.E. London and New York: Saunders & Co. 1904. Pp. 138. With 42 Coloured Lithographic Plates and many Text-Illustrations, some in colours.

A good Atlas of operative gynæcology would fulfil a long-experienced want, provided that it is full, and that the illustrations are clearly drawn. We do not know, however, that the Atlas before us is altogether satisfactory. Many of the coloured plates it contains are excellent, but others do not convey as much to the eye as would a half-tone drawing, and illustrations of many common operations are wanting. On the whole, we think that, from the point of view of an atlas, the book is hardly equal to many others of this well-known series.

WRIGHT'S "Liquor Carbonis Detergens."

The "British Medical Journal,"

April 9th, 1904, says:

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PART III.

SPECIAL REPORTS.

REPORT ON PUBLIC HEALTH.[a]

By Sir Charles A. Cameron, C.B., M.D.; D.P.H., Camb.; M. and Hon. F.R.C.P.I.; F.R.C.S.I.; F.I.C.; Ex-President, Hon. Dipl. Public Health, and Professor of Hygiene and Chemistry, R.C.S.I.; Vice-President and Ex-President of the Royal Institute of Public Health, and of the Society of Public Analysts; Medical Officer of Health for Dublin; Hon. Member of the Hygienic Societies of France, Belgium, Paris, and Bordeaux, the Academy of Medicine, Sweden, and of the State Medical Society of California, &c.; Examiner in Sanitary Science, Royal University of Ireland; Member of the Army Sanitary Committee, Harben Gold Medallist, 1903, &c.

I. HEALTH OF LIVERPOOL.
II. DEATH-RATE IN MANILLA.
III. VITAL STATISTICS OF LONDON AND OTHER LARGE TOWNS.
IV. REPORT OF THE COMMISSION APPOINTED TO INQUIRE INTO THE RELATION BETWEEN HUMAN AND BOVINE TUBERCULOSIS.
V. COMPENSATION FOR THE DESTRUCTION OF TUBERCULOUS ANIMALS.
VI. IMPROVED DWELLINGS FOR THE PEOPLE.
VII. THE STATUS OF MEDICAL OFFICERS OF HEALTH IN IRELAND.
VIII. A STERILISER FOR INFECTED DISCHARGES.

I. HEALTH OF LIVERPOOL.

I have received the Report on the Health of the City of Liverpool for 1903, from that model Medical Officer of

[a] The author of this Report will be glad to receive any books, pamphlets or papers relating to hygiene, dietetics, &c. They may be forwarded through the agencies of the Journal.

Health, Dr. E. W. Hope. It is a very substantial volume of 240 pages, besides dozens of diagrams. Printed on first quality paper, and having excellent type, it is not often that so perfect a Public Health Report comes into my possession. It will interest the readers of this Journal to present to them a brief analysis of the vital statistics of this important city, in which so many Irish people dwell.

The population of Liverpool was estimated in 1903 to be 716,810. The death-rate was 19.8 per 1,000 persons living, and the lowest ever recorded in that city. Corrected for age and sex distribution, the rate was 22.5 per 1,000. The rate varied considerably in different districts. In the fashionable one, termed Sefton Park, it was 9, whilst in the Scotland district (population 52,834) it was 33.8 per 1,000. and in the Exchange Division (population 41,332) it rose to 35.2 per 1,000. These are corrected rates.

The infantile mortality is high in some districts, low in others, and on the average above the mean rate for the 76 largest towns in England and Wales. For all Liverpool 159 deaths of infants under one year per 1,000 births occurred in 1903; in the 76 large towns, 144; in London, 131; in the largest towns, excluding London, 149; in Dublin, 153. The rate varied from 88 in Sefton Park district to 215 in Scotland district. The infantile death-rate in Liverpool has fallen considerably of late years. This reduction must be in part fairly attributed to the efforts of the sanitary authorities. They have distributed widely instructions as to the feeding of infants, and they have a staff of inspectors who give verbal instructions in reference to this important department of domestic hygiene. They have established depôts for the sale of sterilised milk for the use of children, a practice which originated some years ago in St. Helen's.

Small-pox raged in Liverpool in 1902 and 1903. From October, 1902, to 31st December, 1903, there were 2,032 cases. The maximal number in hospital was 335. The protective effects of vaccination were exemplified by the epidemic. No one connected with the small-pox hospitals contracted the disease. The staffs had been re-vaccinated. Of the 145 patients in Faza Kerly Hospital who presented

no vaccination marks, or who had been unsuccessfully vaccinated, or whose vaccination was doubtful, 34 or 23.4 per cent. died. As regards the others, 28 had severe attacks and 83 mild ones. In 571 cases there were one or more vaccination marks, and the mortality was only 2 per cent. Results favourable to vaccination were observed in the other hospitals.

Typhus fever has practically died out in Dublin, but it still exists in Liverpool. There were 272 cases in 1903, and of these 57 had a fatal termination. There were in the previous eight years deaths from this disease, varying from 11 in 1900 to 36 in 1896.

The zymotic death-rate was 2.8 per 1,000 persons living. The average rate for the previous 10 years was 3.7 per 1,000.

There is voluntary notification of phthisis, and the notifications are paid for. It seems strange that in Dublin it is not legal to pay for the notification of any disease that is not on the Schedule to the Notification Act. In 1903, 1,874 cases were notified. In 746 of them there was disinfection. One school was closed on account of the prevalence of infectious disease. In England the public health authorities are empowered to order the closure of schools during epidemics. In Ireland the sanitary authorities have no power of the kind.

One of the most interesting departments is that in which milk is sterilised and distributed. The expense of the department in 1903 was £4,259 3s. 5d. The sale of the milk realised £2,230 11s. 1d. The loss was, therefore, £2,028 12s. 4d.

The apparatus employed consists of two sterilisers—one (Jackson's) which charges 440 bottles at one operation, and Ayvern's, which charges 405 bottles at one operation. There are four depôts for its sale, but it is also supplied to a large number of private dairies. Several thousands of children have been supplied with the sterilised milk. Dr. Mussen investigated the effects of the use of the sterilised milk on 360 children and found it to be satisfactory. Dealing with larger figures, Dr. Hope tells us that the death-rate of the infants using sterilised milk was only 78 per

1,000, whilst the rate amongst the infants in the whole city was 159 per 1,000 births. If, however, the breast-fed children were excluded, and the death-rate of infants fed on sterilised milk compared with those supplied with mothers' milk, it would exhibit a more striking contrast.

The Corporation of Liverpool regularly employ the services of bacteriologists. As many as 582 samples of milk were examined in 1903, and in 21 of them tubercle bacilli were detected.

It is interesting to learn that town milks were freer from the bacilli than the country milk. Of 1,350 samples of the former, taken from 1896 to 1903, 25 contained tubercle bacilli, whilst of 1,686 specimens of country milk 106 contained the bacilli. There is little doubt but that filth is more abundant in the dairy-yards of the country than in those of the towns, because no doubt the latter are subject to more stringent supervision.

The preparation and supply of sterilised milk by municipal authorities is making progress. In Glasgow it has just been initiated. The Asylums Committee have requested the London County Council to expend £2,780 in providing cowsheds for 40 cows at the Health Asylum, Bexley. The milk produced would be sterilised.

Dr. Hope points out the danger arising from sewage having access to oyster, cockle, and mussel, &c., beds; 102 specimens of them were subjected to bacteriological examination. *Bacilli coli communes* were present 39 times and the *Bacillus enteritidis* 24 times. The former were more frequently found in oysters and mussels, and the latter in cockles, periwinkles, and mussels.

II. DEATH-RATE IN MANILLA.

The United States having acquired the Philippine Islands, have set up a sanitary organisation in them and publish monthly vital statistics. The population of the City of Manilla was 219,141 in 1903. The population comprised 4,389 Americans, 189,782 Philippinos, 2,528 Spaniards, 1,117 other Europeans, 21,230 Chinese, and 895 of other nationalities. It is extraordinary how great is the difference in the mortality of these various nationalities.

In the month of January, 1904, only one American died. The death-rates amongst the other nationalities were as follows:—Philippinos, 46.06; Spaniards, 9.33; other Europeans, 21.09; Chinese, 24.96; all others, 39.40; average of all, 42.64. In 1903 the death-rate of Manilla for each month was as follows:—January, 28.89; February, 27.33; March, 25.94; April, 27.31; May, 37.05; June, 29.46; July, 33.21; August, 46.17; September, 67.97; October, 65.19; November, 53.91; December, 47.89.

III. VITAL STATISTICS OF LONDON AND OTHER LARGE TOWNS.

The Registrar-General of England and Wales has just published the vital statistics of London, of 75 other large towns, and of 105 towns under 50,000 population for the year 1903.

England and Wales are peculiar amongst the great States of Europe as regards the extent of their urban population. A very small part of the population of the huge Russian Empire is located in towns of large size. In 1903 there were in England and Wales 76 towns of which each contained more than 50,000 inhabitants. They contained 15,075,011 persons, or half the population of the whole country. The death-rate in these towns, calculated without reference to age or sex distribution, was 16.3 per 1,000 persons living, or 1.1 per 1,000 below the rate for 1902. This rate is not so very far from that of the rural districts, but the time is not very remote when the urban mortality nearly doubled that of the country. That the great improvement in the health of town communities is due to sanitary improvements is beyond doubt. The lowest crude death-rate in any of the 76 towns was 7.9 Hornsey enjoyed this pre-eminence. Wigan stands highest in mortality figures its death-rate being 22.2.

The Registrar-General also gives the vital statistics of 103 towns containing each from 25,000 to 5,000, or a total population estimated to be 3,706,326. The crude death-rate in them averaged 14.6 per 1,000. The lowest (9) was in Beckenham, the highest (21.2) in Longton.

Corrected for age and sex distribution the death-rate in the 76 largest towns was 17.2, or only 3.04 in excess of the rate in England and Wales less the 76 great towns.

The zymotic death-rate in the 76 towns was, on the average, 1.89 per 1,000. The lowest (0.69) was in Hastings: the highest (4.18) in Wigan. In Dublin the rate was lower than usual—namely, 1.48.

The birth-rate in the 76 great towns was 29.7 per 1,000 of the population. It has been declining for some years past.

IV. THE REPORT OF THE COMMISSION APPOINTED TO INQUIRE INTO THE RELATION BETWEEN HUMAN AND BOVINE TUBERCULOSIS.

The Commission have issued an *ad interim* report which is of great interest. Their experiments were carried out on grounds at Stanstead, Essex, placed at their disposal by Sir James Blyth, Bart.

The Commissioners are—Sir Michael Foster (chairman), Drs. G. Sims Woodhead and Sidney Martin, J. McFadyen (veterinary), and Professor Rupert Boyce.

The infective material taken from more than twenty persons affected with tuberculosis was employed. Some of it was sputum from phthisical patients, some was from tuberculous lungs, mesenteric glands, tuberculous joints, &c. The introduction of seven specimens of this infective material into oxen speedily produced acute tuberculosis, spreading to the lungs, spleen, liver, lymphatic glands, &c. The remaining specimens did not produce so great an effect upon an ox, but the animal was affected in two instances at the parts in which the virus was introduced. Material from this comparatively slightly affected part when introduced into other oxen or guinea pigs, ultimately gave rise to bovine tuberculosis of an intense character. The Commissioners say:—

"We have very carefully compared the disease thus set up in the bovine animal by material of human origin with that set up in the bovine animal by material of bovine origin, and so far we have found the one, both in its broad general features and in its finer histological details, to be identical with the other. We have so far failed to discover any character by which we could distinguish the one from the other; and our records contain accounts of the *post-mortem* examinations of bovine animals

infected with tuberculosis material of human origin, which might be used as typical descriptions of ordinary bovine tuberculosis.

"The results which we have thus obtained are so striking, that we have felt it our duty to make them known without further delay, in the present *Interim* Report.

"We defer to a further Report all narration of the details of our experiments (and we may say that up to the present time we have made use of more than two hundred bovine animals), as well as all discussions, including those dealing with the influence of dose and of individual, as well as racial susceptibility, with questions of the specific virulence of the different strains of bacilli, with the relative activity of cultures of bacilli and of emulsions of tuberculous organs and tissues, and with other points. In that Report we shall deal fully with all these matters, as well as with the question why our results differ from those of some other observers.

"Meanwhile we have thought it our duty to make this short *Interim* Report, for the reason that the result at which we have arrived, namely, that tubercle of human origin can give rise in the bovine animal to tuberculosis identical with ordinary bovine tuberculosis, seems to us to show quite clearly that it would be most unwise to frame or modify legislative measures in accordance with the view that human and bovine tubercle bacilli are specifically different from each other, and that the disease caused by the one is a wholly different thing from the disease caused by the other."

According to a writer in the *Therapist* for July 15th, 1904, Professor Koch is still sceptical:—

"In traversing the Report of the Commission, Prof. Koch said, in an interview with a press representative, that 'he would wait for proofs as to whether the Commission were right': but, he added, 'it has not been proved that men can be infected by matter from animal origin.' With increasing emphasis the Professor continued, 'I see absolutely no reason to change my view, arrived at after years of careful experiment, that there is no evidence to prove that men can be infected by animal tuberculosis in any than the very slightest degree. The Commission has only treated half the question, and that the less important half.

"'Show me,' he continued, 'one single man who has been so

infected. Prove to me that he has been so infected before you ask me to change my views. Of all the millions of men, women, and children who eat bovine flesh and drink milk, how is it that no case is known where tuberculosis has been set up by partaking of infected beef and milk? Prove to me that babies are infected. For combating tuberculosis all this cry made about milk is of minor importance, and misses the mark. Far too much stress is laid on it, and far too little on the chief causes of the disease—viz., the spittle of persons diseased, and insanitary and unhealthy dwellings.' "

V. COMPENSATION FOR THE DESTRUCTION OF TUBERCULOUS ANIMALS.

A Parliamentary Committee is now sitting to hear evidence as regards compensation to the owners of tuberculous oxen slaughtered on account of this disease and condemned as food for man. It would be desirable to treat this disease in oxen in the same way as pleuro-pneumonia is treated by the Contagious Diseases Animals Act. Compensation is given in cases of that disease which is, so far as man is concerned, not so serious as tuberculosis. A considerable amount of evidence in favour of compensation has been given before the Committee.

VI. IMPROVED DWELLINGS FOR THE PEOPLE.

The recently-issued Report of the Metropolitan (London) Association for Improving the Dwellings of the Working Classes is a very satisfactory one, and a great incentive to form similar associations in other cities and in London itself. The gross rentals for the year were £27,340 8s., an excess of £404 11s. 2d. over the previous year's A dividend (including an *ad interim* one) of 4½ per cent. was declared. The rate of mortality amongst the tenants was 13.68 per 1,000 persons living. Very properly the rate was corrected by including the deaths of tenants that had occurred in hospitals and other institutions. The utterly impossible low death-rates sometimes published in connection with some model dwellings is due to the fact that only the deaths that occur in the dwellings are dealt with. Amongst the working classes a large proportion of the

deaths take place in public institutions. In Dublin 37 per cent. of the whole population die in them.

VII. THE STATUS OF MEDICAL OFFICERS OF HEALTH IN IRELAND.

Having been requested to preside at the Conference of Medical Officers of Health, held in Glasgow last July in connection with the Congress of the Sanitary Institute, I prepared an Address to it, of which the following is an abstract:—

"The Public Health (Ireland) Act of 1874 created two classes of medical health officers—namely, medical officers of health and medical superintendent officers. The Local Government Board constituted a third class—consulting sanitary officers. The Poor Law (dispensary) medical officers became *ex officio* medical officers of health. The consulting sanitary officers might or might not be Poor Law medical officers. They were to be elected by the sanitary authorities, subject to the approval of the Local Government Board. For some time no medical superintendent officer of health was appointed.

"In 1866 the Corporation of Dublin appointed a medical officer of health under the provisions of the Sanitary Act, 1860. No other medical officer of health existed that year in Ireland or for several years following. The appointments of such officers was optional until 1874. In that and following years a large number of consulting sanitary officers were appointed by the sanitary authorities of the larger towns, and by the Boards of Guardians of the Poor Law Unions—the sanitary authorities for the rural districts.

"In 1878 the Act of 1874 was wholly repealed, and a new one, embodying, with additions, about twenty sanitary statutes, was enacted. It also provided that the Poor Law medical officers should be *ex-officio* medical officers of health.

"In 1874 the Local Government Board issued a sealed order to the Corporation of Dublin directing them to appoint a 'medical officer of health' and a 'consulting sanitary officer.' I was appointed to the former office, and Dr. Mapother, who had borne that title since 1866, became consulting sanitary officer.

"On the passing of the Public Health Act of 1878, the Corporation were directed to appoint a 'medical superintendent officer of health' and an 'executive officer of health.' Dr. Mapother

was elected to the former office, whilst retaining the position of consulting sanitary officer, and the secretary of the public health committee had his designation changed to executive sanitary officer. Dr. Mapother resigned his position as superintendent medical officer of health, in 1879, and I succeeded him.

"In 1882, on the death of the executive sanitary officer, his duties were added to mine, and I was given the whole charge of the sanitary department. Finally Dr. Mapother received a pension, and the position of consulting sanitary officer for Dublin was terminated. Although I am now medical and executive officer of health and public analyst for Dublin, I think it extremely improbable that such a combination of offices will continue after my time. The work of sanitary authorities is yearly increasing in extent and variety, and division of official labour is becoming more and more desirable in the larger sanitary districts.

"The consulting sanitary officers appointed by the Board of Guardians were, for by far the greater number, the medical officers of the workhouse infirmaries. In some cases the *ex-officio* health officers and non-union officers were also consulting sanitary officers. Their maximal salary was £50 a year; in only a very few instances some were paid by fees, but the majority received salaries of from £5 to £20 per annum. The Local Government Board of Ireland have recently decided that vacancies in these offices are not to be filled up.

"The duties of medical superintendent officers of health as defined by the Local Government Board differ only in one important respect from those of the consulting sanitary officer, namely, that they include the supervision of the work of the *ex-officio* officers. Perhaps in process of time the remaining consultants will become medical superintendent officers of health. The following is an up-to-date list of county boroughs and urban and rural districts in which medical superintendent officers of health are appointed:—

Dublin County Borough[a]	£1,000
Belfast County Borough	500
Cork County Borough	200
Limerick County Borough	100
Londonderry County Borough	350
Waterford County Borough	60

[a] Medical Superintendent Officer of Health, Executive Sanitary Officer and Public Analyst. Allowed £120 a year for expenses, the use of a laboratory, and provided with some assistants.

Ballinasloe Urban District	£15
Bray Urban District (vacant since September, 1903)	30
Drogheda Urban District	40
Kingstown Urban District	100
Lurgan Urban District	25
New Ross Urban District	15
Rathmines and Rathgar Urban District	50
Tralee Urban District	25
Castlereagh (Belfast No. 2) Rural District	20
Belfast Rural District	12
Castlebar Rural District (vacant since March, 1903) ..	15
Glennamaddy Rural District	10
Dublin, North, Rural District	20

"By the Irish Local Government Act of 1898 the Boards of Guardians ceased to be sanitary authorities. The districts under their control were formed into rural districts, and placed under the government of 'Councils,' who have the power of appointing medical superintendent officers of health.

"On the passing of the Public Health Act in 1874 the Dublin Corporation were requested by the Local Government Board to fix the salaries of the *ex-officio* medical officers of health in the city dispensary districts. The sum fixed for each was £25 a year. As there were fifteen dispensary physicians the total sum given to them was £375, and subsequently on the appointment of another additional officer, £400 a year. There are now no fewer than twenty of these officers in the city of Dublin; population 292,000. A curious circumstance in this case was the fixing of salaries by an authority who did not pay them, for until 1898 the city district officers were paid by the Boards of Guardians. Agreeably to the provisions of the Public Health Act of 1874, the Treasury paid one-half of the salaries of medical officers of health and sanitary inspectors, who were, in consequence of the passing of the Public Health Act, appointed; it was also determined to give one-half of any increases of salaries of existing health officers. This arrangement was most unfair to Dublin, which was in effect punished instead of being rewarded for having appointed a large sanitary staff when they were not compelled by law to do so. On the other hand, the towns in which no sanitary staff, or totally insufficient ones, existed forthwith appointed their sanitary officers, and received from the Treasury, through the Local Government Board, a moiety of their salaries.

"It is to the credit of the Irish Local Government Board that on the passing of the Local Government (Ireland) Act they rectified the injustice under which Dublin had suffered for more than twenty years. The Board have now the disposal of the grant to sanitary authorities, and they pay half the salaries of all the public health officers who were in existence in 1874, or the persons who had succeeded them. The sum received for the year 1903 was £2,091.

"There is no reference to the subject of a retiring allowance to medical officers of health in the Public Health Act. In the case of an officer giving his whole time to the service of his authority, it would seem likely that, as in the case of other municipal whole-time officers, he would be entitled to a pension.

"As I am not a whole-time officer the Corporation of Dublin was so good as to get power to grant a pension to their medical officer of health. The 93rd section of the Dublin Corporation Act, 1890 (53 & 54 Vic., c. ccxlvi.) enacts that, with the approval of the Local Government Board, they may grant a retiring allowance not exceeding two-thirds of his salary to 'any medical officer of health of the Corporation.'

"A similar section was passed subsequently in an Act promoted by the Corporation of Belfast.

"When the Dublin Corporation Act was passed the payment of the district medical officers of health was made out of the Poor Rate. A question has now arisen: Does section 93 of the Corporation Act apply to them as well as the medical superintendent officer of health? Two district medical officers of health, having resigned, applied for pensions to the Corporation. The law agent of that body considered that the Corporation had no power to grant such pensions, as they (the district officers) were not contemplated when the Corporation Act of 1890 was obtained, and as no provision for pensions was made in the Act of 1878.

"The Irish Medical Association, therefore, submitted a case to Mr Matheson, an eminent King's Counsel. His opinion is too long to be read to the Conference. As regards the Local Government Board, their views seem to be rather in favour of those of the Corporation's law adviser.

"So long as the payment of the medical officers of health was in the hands of the Board of Guardians, it is usual to take into consideration, in determining the amount of their retiring allowances, their income from all official sources—vaccination, registration of births and deaths, fees, and public health salary. In

future the Boards will, in all probability, take no account of their income as sanitary officers accruing after 1898. It is only common justice to the medical officers of health that power should be given to the sanitary authorities who have succeeded the Boards of Guardians to grant retiring allowances to the medical officers of health. Indeed, it is to be hoped that at no distant date the Poor Law officers and medical officers of health will be placed as regards pensions in the same position as civil servants. At present the granting of pensions is wholly optional with the local authorities.

"The *ex-officio* medical officers of health are dissatisfied with the smallness of the salaries which they receive: for all Ireland they average £18 6s. a year. The Corporation of Dublin proposed in 1901 to increase their officers' salaries from £25 to £40 per annum, but the proposal was not approved by the Local Government Board.

"No inconsiderable proportion of the *ex-officio* officers would prefer not to have any sanitary duties imposed upon them, believing that they prejudice their medical practice. In visiting their patients nuisances come under their observation, to which they feel obliged to direct the attention of the sanitary authority. Amongst the poorer, and to some extent the middle, classes, there is often an objection to have their dwellings disinfected after the occurrence of infectious disease in them. They may think it unnecessary or may dislike the inconvenience it causes them. In many cases the dispensary physician is not called in, and some other medical man's advice is sought for in the hope that he would not insist on disinfection being performed by the sanitary authority.

"Another reason why the dispensary physician is often ignored is due to the objection some persons have to go to a fever hospital, or to allow persons in their charge (except employees) to be removed to it. As the medical officer would in all probability insist on the removal to hospital of a fever patient unprovided with proper accommodation, or who was likely to endanger the health of persons residing in the same house, a physician less likely to be so uncompromising is sent for.

"It has been suggested that in the next Public Health Act for Ireland *ex-officio* medical officers of health should be abolished. A Commission appointed in 1900 by the Lord Lieutenant to inquire into the causes of the high death-rate in Dublin, recom-

mended the abolition of *ex-officio* officers of health in Dublin and the substitution therefor of an assistant whole-time officer. I am inclined to think the recommendation a good one if it could be carried out without inflicting pecuniary loss on the present officers. As regards Ireland at large, it would be difficult, or impossible, to get in many a district any medical man other than the Poor Law officer, for the simple reason that he is the only medical man in it. Instead of abolishing the *ex-officio* officers it would be better to institute medical officers of health in connection with the County Councils. The appointments should be made compulsory, and the officers should give their whole time to the duties. They should have a small number of sanitary inspectors, with jurisdiction extending over the whole county. Rural sanitation is sadly neglected in Ireland, and practically there are no whole-time sanitary sub-officers in the rural districts. The relieving officer is generally also the sanitary sub-officer with a trifling salary.

"An energetic medical superintendent officer of health would find ample and useful employment in every county in Ireland. Much of the milk supplied to towns comes from farms the hygiene of which is very insufficiently inquired into. Nuisances of all kinds are to be found in the country as well as in the town. Many of the former cannot be dealt with by the local medical officer of health; he cannot get his petty local Board to deal with them, or perhaps he finds it incompatible with his interests to take too energetic action as regards them. Those responsible for an insanitary state of things are his patients, or the members of his Board of Guardians. It is not worth his paltry salary of £10 or £15 a year to offend them. Notwithstanding the unpleasant position in which hygienic activity places the rural health officer, many of them do their best to remedy insanitary evils, and suffer for their activity and zeal.

"A county medical officer and two or three sanitary inspectors, independent of local influences, irremovable except for misconduct, and entitled to a pension, would do more good than can ever be accomplished by the existing sanitary organisations. The nature of the duties of medical officers of health and medical superintendent officers of health are set out in a Sanitary Order of the Local Government Board to the County Boroughs of Dublin and Belfast. This I need not give here as it is well known."

VIII. A STERILISER FOR INFECTED DISCHARGES.

At the Sanitary Congress, held at Folkestone last July, Major H. A. Cummins, R.A.M.C., read a paper showing the desirability of disinfecting alvine and other discharges from hospitals. In South Africa, whilst in charge of a hospital during an epidemic of enteric fever, he boiled the infected excreta and slops. A small quantity of izol or carbolic acid added to the excreta effectually masked or destroyed the unpleasant odour. Since his return he has designed an apparatus for treating the infective discharges. It consists of a vessel divided into two compartments, each provided with a siphon and enclosed in a hearth provided with a gas or coal fire, and a hood from which a flue proceeds. The siphons are connected through valves to a common pipe. The upper and lower parts of the apparatus communicate with the hearth, through which the products of combustion from the fire rise quickly and cause a draught which carries the vapours from the vessel up to the chimney. The matters to be disinfected are placed in one compartment of the vessel, and the utensils which had contained them in the other. Some disinfectant may be added. A boiling temperature applied destroys the bacilli of the disease. When convenient, steam may be used to produce the required temperature. Messrs. J. Defries & Sons, of London, have constructed Major Cummins' apparatus. It may, says the Major, be considered "a sterilising water-closet." It may, of course, be used in connection with diseases other than enteric fever.

CÆCAL HÆMORRHAGE CAUSED BY VALVULAR DISEASE OF THE HEART.

At a meeting of the Academy of Medicine of Paris M. Benjamin brought forward a case of cæcal hæmorrhage following on valvular disease of the heart in a horse six years old. The cæcum was found full of blood and serum. The heart was suffering from excentric hypertrophy, and marked initial insufficiency. In the case of a very valuable stallion that died suddenly from intestinal hæmorrhage an identical condition of the heart was also found by him.—*Gaz. Méd. de Paris*, Année LXXV., Serie xiii., Tome iv.

PART IV.

MEDICAL MISCELLANY.

SANITARY AND METEOROLOGICAL NOTES.

Compiled by Sir John Moore, B.A., M.D. Dubl.; D.Sc. Oxon.; F.R.C.P.I.; F.R. Met. Soc.; Diplomate in State Medicine and Ex-Sch. Trin. Coll. Dubl.

Vital Statistics.

For four weeks ending Saturday, July 16, 1904.

IRELAND.

Twenty-two Town Districts.

The average annual death-rate represented by the deaths—exclusive of deaths of persons admitted into public institutions from without the respective districts—registered in the week ending July 16, 1904, in the Dublin Registration Area and the twenty-one principal provincial Urban Districts of Ireland was 17.4 per 1,000 of their aggregate population, which for the purposes of these returns is estimated at 1,093,289.

Towns, &c.	Week ending June 25	July 2	July 9	July 16	Average Rate for 4 weeks	Towns, &c.	Week ending June 25	July 2	July 9	July 16	Average Rate for 4 weeks
22 Town Districts	17.5	17.4	17.1	17.5	17.4	Lisburn	22.7	18.2	–	9.1	12.5
Armagh	20.6	–	13.7	27.5	15.5	Londonderry	12.6	20.2	11.3	17.6	15.4
Ballymena	14.4	9.6	33.5	38.3	23.9	Lurgan	8.9	–	17.7	4.4	7.8
Belfast	17.6	17.3	17.7	16.6	17.3	Newry	12.6	21.0	4.2	4.2	10.5
Clonmel	20.5	15.4	5.1	5.1	11.5	Newtownards	11.4	45.8	5.7	17.2	20.0
Cork	19.2	14.4	19.2	13.7	16.6	Portadown	–	5.2	5.2	15.5	6.5
Drogheda	8.2	8.2	4.1	4.1	6.2	Queenstown	19.8	13.2	6.6	19.8	14.9
Dublin (Reg. Area)	19.5	16.5	17.9	19.3	18.3	Sligo	4.8	4.8	38.4	28.8	19.2
Dundalk	8.0	12.0	27.9	12.0	15.0	Tralee	10.6	63.4	5.3	21.1	25.1
Galway	11.7	31.1	11.7	38.8	23.3	Waterford	13.6	13.6	29.2	21.4	19.4
Kilkenny	39.3	9.8	19.7	19.7	22.1	Wexford	18.7	37.4	4.7	18.7	19.9
Limerick	15.0	27.3	15.0	12.3	17.4						

The deaths registered in each of the four weeks ended Saturday, July 16, and during the whole of that period, in the several districts, alphabetically arranged, correspond to the annual rates per 1,000 in the foregoing Table.

The deaths (excluding those of persons admitted into public institutions from without the respective districts) from certain epidemic diseases, registered in the 22 districts during the week ended Saturday, July 16, 1904, were equal to an annual rate of 1.6 per 1,000, the rates varying from 0.0 in seventeen of the districts to 6.6 in Queenstown. Among the 114 deaths from all causes registered in Belfast are one from measles, 3 from whooping-cough, 3 from enteric fever, and 3 from diarrhœal diseases. The 14 deaths from all causes in Londonderry include one from diphtheria and 3 from diarrhœal diseases.

DUBLIN REGISTRATION AREA.

The Dublin Registration Area consists of the City of Dublin as extended by the Dublin Corporation Act, 1900, together with the Urban Districts of Rathmines, Pembroke, Blackrock, and Kingstown. The population of this area is 378,994, that of the City being 293,385, Rathmines 33,203, Pembroke 26,025, Blackrock 8,759, and Kingstown 17,622.

In the Dublin Registration Area the births registered during the week ended Saturday, July 16, 1904, amounted to 172—93 boys and 79 girls; and the deaths to 146—80 males and 66 females.

DEATHS.

The deaths registered represent an annual rate of mortality of 20.1 in every 1,000 of the population. Omitting the deaths (numbering 6) of persons admitted into public institutions from localities outside the area, the rate was 19.3 per 1,000. During the twenty-eight weeks ending with Saturday, July 16, the death-rate averaged 25.7, and was 1.4 below the mean rate for the corresponding portions of the ten years 1894–1903.

The total (146) deaths registered include 10 from measles, one from influenza, 3 from whooping-cough, one from diphtheria, 2 from enteric fever, and 2 from *diarrhœa*. Not one death was registered from small-pox, scarlet fever, or typhus. In the 3 weeks preceding, one, 2, and 2 deaths, respectively, from measles were registered.

The 27 deaths from tuberculous disease include 6 from tubercular phthisis, 15 from *phthisis*, 2 from tubercular meningitis, one from tubercular peritonitis, and 3 from other forms of the disease.

There were 2 deaths from broncho-pneumonia and 6 deaths from *pneumonia*.

Two deaths from carcinoma and 3 from *cancer* (*malignant disease*) were recorded.

The deaths of 3 infants were assigned to prematurity.

Of 13 deaths classified under diseases of the nervous system, 10 (all being children under 5 years of age) were attributed to *convulsions*.

Seventeen deaths were attributed to diseases of the heart and blood-vessels.

There were 17 deaths from bronchitis.

Of 3 deaths due to accidental causes, one was by drowning.

In 5 instances the cause of death was "uncertified," there having been no medical attendant during the last illness. These cases include the deaths of 4 children under one year old.

Fifty-four of the persons whose deaths were registered during the week ended July 16 were under 5 years of age (36 being infants under one year, of whom 15 were under one month old), and 32 were aged 60 years and upwards, including 12 persons aged 70 and upwards, of whom 3 were octogenarians, and one (a woman) was stated to have been aged 96 years.

The Registrar-General points out that the names of causes of death printed above in italics should be avoided whenever possible in Medical Certificates of the cause of death.

STATE OF INFECTIOUS DISEASE IN THE DUBLIN REGISTRATION AREA AND IN BELFAST.

Returns of the number of cases of infectious diseases notified under the "Infectious Diseases (Notification) Act, 1899," as set forth in the following table, have been furnished by Sir Charles A. Cameron, C.B., M.D., Medical Superintendent Officer of Health for the City of Dublin; Mr. Fawcett, Executive Sanitary Officer for Rathmines and Rathgar Urban District; Mr. Manly, Executive Sanitary Officer for Pembroke Urban District; Mr. Heron, Executive Sanitary Officer for Blackrock Urban District; Dr. Byrne Power, Medical Superintendent Officer of Health for Kingstown Urban District; and Dr. Whitaker, Medical Superintendent Officer of Health for the City of Belfast.

TABLE SHOWING THE NUMBER OF CASES OF INFECTIOUS DISEASES notified in the Dublin Registration Area (viz.—the City of Dublin and the Urban Districts of Rathmines and Rathgar, Pembroke, Blackrock, and Kingstown), and in the City of Belfast, during the week ended July 16, 1904, and during each of the preceding three weeks

CITIES AND URBAN DISTRICTS	Week ending	Small-pox	Measles	Rubella, or German Measles	Scarlet Fever	Typhus Fever	Relapsing Fever	Diphtheria	Membranous Croup	Continued Fever	Typhoid or Enteric Fever	Erysipelas	Puerperal Fever	Varicella	Other Notifiable Diseases	Total
City of Dublin	June 25	–	–	–	5	–	–	6	–	2	15	10	–	–	–	38
	July 2	–	–	–	13	–	–	6	–	10	23	7	–	–	–	59
	July 9	–	–	–	3	–	–	1	–	2	10	17	–	–	–	33
	July 16	–	–	–	6	–	–	4	–	1	4	11	–	–	–	26
Rathmines and Rathgar Urban District	June 25	–	–	–	2	–	–	1	–	–	–	–	–	–	1	4
	July 2	–	–	–	1	–	–	–	–	–	–	–	–	–	–	1
	July 9	–	–	–	1	–	–	–	–	–	–	1	–	–	–	2
	July 16	–	–	–	5	–	–	1	–	–	1	–	–	–	–	7
Pembroke Urban District	June 25	–	2	–	–	–	–	1	–	–	–	–	–	–	11	14
	July 2	–	3	–	1	–	–	1	–	–	–	1	–	–	1	7
	July 9	–	14	–	1	–	–	–	–	–	–	–	–	–	2	17
	July 16	–	10	–	–	–	–	2	–	–	1	–	–	–	3	16
Blackrock Urban District	June 25	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	July 2	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	July 9	–	–	–	2	–	–	–	–	–	–	–	–	–	–	2
	July 16	–	–	–	2	–	–	–	–	–	–	–	–	–	–	2
Kingstown Urban District	June 25	–	–	–	1	–	–	–	–	–	–	–	–	–	–	1
	July 2	–	–	–	–	–	–	–	–	–	1	–	–	–	–	1
	July 9	–	–	–	–	–	–	1	–	–	–	–	–	–	–	1
	July 16	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
City of Belfast	June 25	3	–	–	5	–	–	2	5	12	10	10	–	–	–	47
	July 2	5	–	–	10	–	–	4	1	6	4	7	1	–	–	38
	July 9	2	–	–	7	–	–	5	2	2	2	4	–	–	–	24
	July 16	2	–	–	8	–	–	3	–	8	4	4	–	–	–	29

CASES OF INFECTIOUS DISEASES UNDER TREATMENT IN DUBLIN HOSPITALS.

During the week ended Saturday, July 16, 1904, 22 cases of measles were admitted to hospital, 24 were discharged, 4 died, and 77 patients remained under treatment at its close.

Nine cases of scarlet fever were admitted to hospital, 10 cases were discharged, and 50 cases remained under treatment at the close of the week. This number is exclusive of 18 convalescents under treatment at Beneavin, Glasnevin, the Convalescent Home of Cork-street Fever Hospital.

Six cases of diphtheria were admitted to hospital, 4 were discharged, and 19 cases remained under treatment at the close of the week.

Five cases of enteric fever were admitted to hospital, 4 cases

were discharged, there was one death, and 50 cases remained under treatment at the close of the week.

In addition to the above-named diseases, 8 cases of pneumonia were admitted to hospital, 9 patients were discharged, there was one death, and 16 cases remained under treatment at the end of the week.

ENGLAND AND SCOTLAND.

The mortality in the week ended Saturday, July 16, 1904, in 76 large English towns, including London (in which the rate was 12.9), was equal to an average annual death-rate of 13.7 per 1,000 persons living. The average rate for 8 principal towns of Scotland was 14.8 per 1,000, the rate for Glasgow being 15.3, and for Edinburgh 13.4.

Vital Statistics.

For four weeks ending Saturday, August 13, 1904.

IRELAND.

Twenty-two Town Districts.

The average annual death-rate represented by the deaths—exclusive of deaths of persons admitted into public institutions from without the respective districts—registered in the week ending August 13, 1904, in the Dublin Registration Area and the twenty-one principal provincial Urban Districts of Ireland was 19.6 per 1,000 of their aggregate population, which for the purposes of these returns is estimated at 1,093,289. The deaths registered in each of the four weeks ended Saturday, August 13, and during the whole of that period in the several districts, alphabetically arranged, correspond to the following annual rates per 1,000:—

Towns, &c.	Week ending				Average Rate for 4 weeks	Towns, &c.	Week ending				Average Rate for 4 weeks
	July 23	July 30	Aug. 6	Aug. 13			July 23	July 30	Aug. 6	Aug. 13	
22 Town Districts	15.6	15.9	17.6	19.6	17.2	Lisburn -	22.7	13.6	9.1	13.6	14.8
Armagh -	6.9	6.9	27.5	48.1	22.3	Londonderry	8.8	8.8	17.6	10.1	11.3
Ballymena	4.8	4.8	23.9	4.8	9.6	Lurgan -	8.9	17.7	8.9	8.9	11.1
Belfast -	16.3	16.7	15.8	18.6	16.9	Newry -	25.2	8.4	4.2	4.2	10.5
Clonmel -	10.3	15.4	41.0	10.3	19.2	Newtownards	17.2	5.7	11.4	5.7	10.0
Cork -	13.7	13.0	17.1	18.5	15.6	Portadown	15.5	31.0	5.2	10.3	15.5
Drogheda -	24.5	8.2	8.2	12.3	13.3	Queenstown	6.6	6.6	–	–	3.3
Dublin - (Reg. Area)	17.5	17.9	21.2	27.0	21.9	Sligo -	14.4	14.4	9.6	4.8	10.8
Dundalk -	16.0	4.0	8.0	16.0	11.0	Tralee -	5.3	–	31.7	5.3	10.6
Galway -	11.7	11.7	7.8	7.8	9.8	Waterford	11.7	9.7	19.5	9.7	12.7
Kilkenny -	14.7	14.7	4.9	9.8	11.0	Wexford -	4.7	28.0	28.0	4.7	16.4
Limerick -	13.7	23.2	15.0	20.5	18.1						

The deaths (excluding those of persons admitted into public institutions from without the respective districts) from certain epidemic diseases, registered in the 22 districts during the week ended Saturday, August 13, 1904, were equal to an annual rate of 3.7 per 1.000, the rates varying from 0.0 in fifteen of the districts to 20.6 in Armagh—the 7 deaths from all causes registered in that district including one death from small-pox of a person who was never vaccinated, one from whooping-cough, and one from diarrhœa. The 128 deaths from all causes registered in Belfast include 5 from whooping-cough, one from diphtheria, one from enteric fever, and 17 from diarrhœal diseases.

DUBLIN REGISTRATION AREA.

In the Dublin Registration Area the births registered during the week ended Saturday, August 13, amounted to 209—116 boys and 93 girls; and the deaths to 199—101 males and 98 females.

DEATHS.

The deaths registered represent an annual rate of mortality of 27.4 in every 1.000 of the population. Omitting the deaths

(numbering 3) of persons admitted into public institutions from localities outside the Area, the rate was 27.0 per 1,000. During the thirty-two weeks ending with Saturday, August 13, the death-rate averaged 25.1, and was 1.4 below the mean rate for the corresponding portions of the ten years 1894–1903.

The total (199) deaths registered include 5 from measles, one from scarlet fever, 4 from whooping-cough, 2 from diphtheria, one from enteric fever, and 33 from diarrhœal diseases. In the 3 preceding weeks 5, 4, and 3 deaths from measles were respectively registered; also 3, 2, and 4 deaths from whooping-cough; 0, one, and 2 deaths from diphtheria; and 5, 5, and 15 deaths from diarrhœal diseases.

One death from tetanus was registered.

There were 3 deaths from broncho-pneumonia and 6 deaths from *pneumonia*.

Of 37 deaths from tuberculous disease, one was assigned to tubercular phthisis, 24 were assigned to *phthisis*, 2 to tubercular meningitis, one to tabes mesenterica, and 9 to other forms of the disease.

Five deaths were caused by *cancer* (*malignant disease*).

Twenty-one deaths (including 11 of children under 5 years from *convulsions*) were caused by diseases of the nervous system.

Nineteen deaths were due to diseases of the heart and blood-vessels.

There were 8 deaths from bronchitis.

Of 3 deaths from accidental causes, one was that of a child 3 years old from burns, and one was caused by drowning.

In 7 instances the cause of death was "uncertified," there having been no medical attendant during the last illness. These cases include the deaths of 4 children under 5 years of age (including 3 infants under one year old) and the death of a person aged 77 years.

Ninety-four of the persons whose deaths were registered were under 5 years of age (69 being infants under one year, of whom 7 were under one month old), and 38 were aged 60 years and upwards, including 19 persons aged 70 and upwards, of whom 5 were octogenarians, and one (a woman) was stated to have been aged 97 years.

The Registrar-General points out that the names of causes of death printed above in italics should be avoided whenever possible in Medical Certificates of the cause of death.

STATE OF INFECTIOUS DISEASE IN THE DUBLIN REGISTRATION AREA AND IN BELFAST.

The usual returns of the number of cases of infectious diseases notified under the "Infectious Diseases (Notification) Act, 1899," as set forth in the following table, have been furnished.

In addition, the Registrar of Dundalk Urban District in his weekly report states "there are 6 cases of small-pox at present in the Isolation Hospital (two only occurred in the Dundalk District); all patients are doing well."

The Registrar of Drogheda No. 3 reports that one case of small-pox was admitted to hospital during the week ended August 13.

TABLE SHOWING THE NUMBER OF CASES OF INFECTIOUS DISEASES notified in the Dublin Registration Area (viz.—the City of Dublin and the Urban Districts of Rathmines and Rathgar, Pembroke, Blackrock, and Kingstown), and in the City of Belfast, during the week ended August 13, 1904, and during each of the preceding three weeks.

Cities and Urban Districts	Week ending	Small-pox	Measles	Rubella, or German Measles	Scarlet Fever	Typhus Fever	Relapsing Fever	Diphtheria	Membranous Croup	Continued Fever	Typhoid or Enteric Fever	Erysipelas	Puerperal Fever	Whooping-cough	Diarrhœal Diseases	Total
City of Dublin	July 23	–	–	–	10	–	–	7	–	3	7	18	–	–	–	45
	July 30	–	–	–	3	–	–	2	–	10	12	11	1	–	–	39
	Aug. 6	–	–	–	3	–	–	1	–	–	12	9	–	–	–	25
	Aug. 13	3	–	–	10	–	–	2	–	6	5	13	–	–	–	39
Rathmines and Rathgar Urban District	July 23	–	–	–	4	–	–	1	–	–	–	–	–	–	–	5
	July 30	–	–	–	1	–	–	2	–	–	1	–	–	–	1	5
	Aug. 6	–	–	–	–	–	–	1	–	–	2	–	–	–	–	3
	Aug. 13	–	–	–	1	–	–	–	–	–	–	–	–	–	3	4
Pembroke Urban District	July 23	–	21	–	–	–	–	–	–	–	–	1	–	5	–	27
	July 30	–	11	–	–	–	–	–	–	–	–	1	–	5	–	17
	Aug. 6	–	14	–	–	–	–	–	–	–	1	–	1	1	–	17
	Aug. 13	–	9	–	2	–	–	1	–	–	–	–	–	4	–	16
Blackrock Urban District	July 23	–	–	–	1	–	–	–	–	–	–	–	–	–	–	1
	July 30	–	–	–	1	–	–	–	–	–	–	–	–	–	–	1
	Aug. 6	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	Aug. 13	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Kingstown Urban District	July 23	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	July 30	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	Aug. 6	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	Aug. 13	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
City of Belfast	July 23	–	–	–	11	–	–	2	–	10	7	5	–	–	–	35
	July 30	1	–	–	8	–	–	1	1	4	5	5	–	–	–	25
	Aug. 6	1	–	–	10	1	–	2	–	15	10	3	1	–	–	42
	Aug. 13	–	–	–	10	1	–	1	–	14	13	9	2	–	–	50

* Including one case of scarlatina and diphtheria.

Cases of Infectious Diseases under Treatment in Dublin Hospitals.

During the week ended Saturday, August 13, 1904, 3 cases of small-pox were admitted to hospital, and remained under treatment on Saturday.

Nineteen cases of measles were admitted to hospital during the week, 25 were discharged, one patient died, and 65 patients remained under treatment at its close.

Six cases of scarlet fever were admitted to hospital, 11 cases were discharged, there was one death, and 34 cases remained under treatment at the close of the week. This number includes 17 convalescents still under treatment in Beneavin, Glasnevin, the Convalescent Home of Cork-street Fever Hospital, Dublin.

Three cases of diphtheria were admitted to hospital, one patient died, and 12 cases remained under treatment at the close of the week.

Eight cases of enteric fever were admitted to hospital, 6 cases were discharged, and 38 cases remained under treatment at the close of the week.

In addition to the above-named diseases, 3 cases of pneumonia were admitted to hospital, 4 patients were discharged, and 10 cases remained under treatment at the end of the week.

ENGLAND AND SCOTLAND.

The mortality in the week ended Saturday, August 13, 1904, in 76 large English towns, including London (in which the rate was 21.4), was equal to an average annual death-rate of 22.1 per 1,000 persons living. The average rate for 8 principal towns of Scotland was 15.7 per 1,000, the rate for Glasgow being 17.4, and for Edinburgh 15.2.

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32 GOLD AND PRIZE MEDALS AWARDED.

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The waters used by us for compounding are obtained in BELFAST from the famous CROMAC SPRING, and in DUBLIN from the historic WELL of ST. PATRICK. These springs have been for ages renowned for their purity, and are now enclosed in the grounds of our respective Factories.

We bottle and pack for Wholesale Export as shewn on cover.

The public who may have any difficulty in procuring our Beverages will oblige by writing direct to us for the address of our nearest agent.

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E are the original manufacturers of this celebrated beverage. From its delightful aroma, matchless purity, and true carminative lities, it has obtained the appellation of "The Beverage of the rld." It is wonderfully exhilarating, but perfectly non-intoxicating. an agreeable aromatic beverage, it is equally suitable for warm or cold ther, and has the additional claim to superiority over all other drinks kindred nature by the fact that it does not lose effervescing properties being decanted. It is as clear and sparkling as champagne.

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NEUTRALIZER of the lactic acid in the blood, which is the cause of Rheumatism and similar affections; an antidote to acid dyspepsia, a promoter of digestion. It is considered to be the most wholesome y beverage that can be taken.

SUPERIOR LEMONADE.

IS well-known beverage needs no encomium, the manufacture of Messrs. CANTRELL & COCHRANE being so long and so favourably wn over the civilized world.

CLUB CIDER.

IS healthful and delicious beverage is one of the most popular which we make, especially with our juvenile customers; it is flavored with e Apple Juice obtained by us direct from the fruit, thus keeping its quet no matter how long decanted.

SPARKLING MONTSERRAT.

IS unique beverage has the pleasant acidity of the Lime Fruit, and that proper measure of sweetness which make certain fruits so refresh- to the system. It is particularly recommended to those suffering from t or Rheumatism.

CLUB KOLA.

IS beverage is made from an extract of the Kola Nut that grows in South Africa, the use of which enables the natives to undergo the ost fatigue without any other food for long periods. As a nerve tonic preparation cannot be excelled, particularly when the system is ced by over indulgence in alcohol.

ROYAL SELTZER WATER.

IS Aërated Water combines the mildly alkaline and tonic saline properties of the genuine water of the Seltzer spring, with a full charge arbonic acid, and presents them in the form of a most refreshing, larating and restorative beverage.

SARSAPARILLA

S obtained a wide celebrity as the most effectual preparation of this famous Blood Purifier. The Medical faculty recommend it.

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DUBLIN - BELFAST, IRELAND.

Meteorology.

Abstract of Observations made in the City of Dublin, Lat. 53° 20′ N., Long. 6° 15′ W., for the Month of July, 1904.

Mean Height of Barometer,	29.968 inches.
Maximal Height of Barometer (17th. at 9 p.m.),	30.290 ,,
Minimal Height of Barometer (1st, at 9 a.m.),	29.635 ,,
Mean Dry-bulb Temperature,	59.9°.
Mean Wet-bulb Temperature,	56.4°.
Mean Dew-point Temperature,	53.2°.
Mean Elastic force (Tension) of Aqueous Vapour,	.408 inch.
Mean Humidity,	79.3 per cent.
Highest Temperature in Shade (on 30th),	74.7°.
Lowest Temperature in Shade (on 7th),	48.0°.
Lowest Temperature on Grass (Radiation) (7th),	43.9°.
Mean Amount of Cloud,	56.6 per cent.
Rainfall (on 15 days),	1.088 inches.
Greatest Daily Rainfall (on 15th),	.319 inch.
General Directions of Wind,	E.N.E., W.S.W.

Remarks.

A warm and generally favourable month, rain falling frequently indeed, but in Dublin on no occasion very heavily. After a long spell of dry and hot weather, the fourth week (ending on Saturday, the 30th) was gloomy and very wet in central England and the Thames Valley—the rainfall of this week was 2.88 inches on 6 days at Oxford, compared with .292 inch on 4 days in Dublin. The spell of broken weather in England was ushered in by severe and fatal thunderstorms on Monday, the 25th. In Dublin the only electrical disturbances of the month occurred on the 19th, on which day the sky bore a very threatening aspect. On the 30th, 2.16 inches of rain fell at Hillington, in Norfolk, during a thunderstorm. The duration of bright sunshine was estimated at 212.7 hours, or a daily average of 6.8 hours, compared with a twenty years' average (1881–1900) of 166.8 hours recorded at the Ordnance Survey Office, Phœnix Park.

In Dublin the arithmetical mean temperature (61.6°) was above the average of the 30 years 1871–1900 (60.3°); the mean dry-bulb readings at 9 a.m. and 9 p.m. were 59.9°. In the forty years ending with 1904, July was coldest in 1879 ("the cold year") (M. T. = 57.2°). It was warmest in 1887 (M. T. = 63.7°); in 1868

("the warm year") and in 1901 (M. T. = 63.5°). In 1900 the M. T. was 63.4°; in 1903, it was 60.1°.

The mean height of the barometer was 29.968 inches, or 0.053 inch above the corrected average value for July—namely, 29.915 inches. The mercury rose to 30.290 inches at 9 p.m. of the 17th, and fell to 29.635 inches at 9 a.m. of the 1st. The observed range of atmospheric pressure was, therefore, only .655 inch.

The mean temperature deduced from daily readings of the dry-bulb thermometer at 9 a.m. and 9 p.m. was 59.9°, or 3.2° above the value for June, 1904. Using the formula, *Mean Temp.* = *Min.* + (*Max.* — *Min.* × .465), the value was 61.1°, or 1.3° above the average mean temperature for July, calculated in the same way, in the thirty years 1871–1900 inclusive, (59.8°). The arithmetical mean of the maximal and minimal readings was 61.6°, compared with a thirty years' average of 60.3°. On the 30th, the thermometer in the screen rose to 74.7°—wind, S.W.; on the 7th the temperature fell to 48.0°—wind, W.N.W. The minimum on the grass was 43.9°, also on the 7th.

The rainfall was only 1.088 inches, distributed, however, over 15 days. The average rainfall for July in the thirty-five years 1866–1900, inclusive, was 2.560 inches, and the average number of rainy days was 18. The rainfall, therefore, and the rainy days were much below the average. In 1880 the rainfall in July was very large—6.087 inches on 24 days; in 1896, also, 5.474 inches fell on 18 days. On the other hand, in 1870, only .539 inch was measured on 8 days; in 1869, the fall was only .739 inch on 9 days; and in 1868, .741 inch fell on but 5 days. In 1903, 4.018 inches fell on 23 days.

High winds were noted on 6 days, but never attained the force of a gale. Temperature reached or exceeded 70° in the screen on 10 days, compared with 7 days in July, 1903, and the same number of days in July, 1902. In July, 1887, temperature reached or exceeded 70° in the screen on no fewer than 17 days. In 1888 the maximum for July was only 68.7°. The thermometer never failed to reach 60°.

Thunder was heard on the 19th; lightning was seen on the night of the same day. There was also a thunderstorm on the 19th. The atmosphere was foggy on the 22nd, 23rd, and 24th.

The rainfall in Dublin during the seven months ending July 31st amounted to 13.905 inches on 117 days, compared with 19.072 inches on 131 days in 1903, 15.507 inches on 115 days in 1902,

11.432 inches on 93 days in 1901, 17.609 inches on 129 days in 1900, 14.416 inches on 107 days in 1899, 13.060 inches on 106 days in 1898, 15.600 inches on 125 days in 1897, 13.328 inches on 102 days in 1896, 16.785 inches on 96 days in 1895, 7.935 inches on 80 days in 1887, and a thirty-five years' average of 14.620 inches on 113 days.

At the Normal Climatological Station in Trinity College, Dublin, the mean height of the barometer was 29.968 inches, the range of atmospheric pressure being from 29.629 inches at 9 a.m. of the 1st to 30.296 inches at 9 p.m. of the 17th. The mean value of the readings of the dry bulb thermometer at 9 a.m. and 9 p.m. was 60.1°. The arithmetical mean of the daily maximal and minimal temperatures was 60.9°. The screened thermometers rose to 74.9° on the 20th, and fell to 47.9° on the 7th. On this latter date the grass minimum was 42.2°. On the 30th the black bulb *in vacuo* rose to 135.1°. Rain fell on 14 days to the amount of 1.064 inches, the greatest fall in 24 hours being .300 inch on the 15th. The duration of bright sunshine, according to the Campbell-Stokes recorder was 201 hours, of which 14½ occurred on the 7th and the same number on the 8th.

At Knockdolian, Greystones, Co. Wicklow, the rainfall in July was 1.395 inches on 15 days, compared with 2.790 inches on 17 days in 1903, 4.550 inches on 11 days in 1902, 2.390 inches on 10 days in 1901, 5.140 inches on 15 days in 1900, 3.480 inches on 14 days in 1899, 1.145 inches on 6 days in 1898, 1.625 inches on 10 days in 1897, 5.726 inches on 16 days in 1896, and 3.680 inches on 16 days in 1895. Of the total rainfall .280 inch fell on the 14th. The total fall since January 1 has been 15.702 inches on 109 days, compared with 20.230 inches on 107 days in 1903, 19.611 inches on 95 days in 1902, 16.060 inches on 85 days in 1901, 23.331 inches on 120 days in 1900, 22.990 inches on 109 days in 1899, 14.645 inches on 94 days in 1898, 19.750 inches on 116 days in 1897, 13.082 inches on 77 days in 1896, and 17.950 inches on 83 days in 1895.

At Cloneevin, Killiney, Co. Dublin, the rainfall in July was only .77 inch on 15 days, compared with a nineteen years' (1885-1903) average of 2.673 inches on 15.3 days. On the 15th the rainfall was .13 inch. In July, 1903, 3.54 inches fell on 19 days; in 1902, 3.64 inches on 13 days; in 1901, 2.80 inches on 13 days;

in 1900, 4.56 inches on 16 days; in 1899, 3.48 inches on 17 days; in 1898, .84 inch on 7 days; in 1897, 1.28 inches on 10 days; in 1896, 6.72 inches on 20 days; in 1895, 3.58 inches on 17 days. Since January 1, 1904, 13.69 inches of rain have fallen on 110 days at this station, compared with 18.38 inches on 129 days in the corresponding 7 months of 1900, 13.54 inches on 95 days in 1901, 16.90 inches on 111 days in 1902, and 17.39 inches on 122 days in 1903.

Dr. Arthur S. Goff reports that at Lynton, Dundrum, County Dublin, the rainfall was 1.22 inches on 17 days. The maximal fall in 24 hours was .31 inch, measured on the 15th. The mean temperature was 63.6°, the range being from 79° on the 8th to 51° on the 7th. In July, 1901, 2.65 inches of rain fell at this station on 11 days, in July, 1902, 4.27 inches on 19 days, and in July, 1903, 3.66 inches on 24 days.

Dr. B. H. Steede reports that at the National Hospital for Consumption, Newcastle, Co. Wicklow, the July rainfall was 2.256 inches on 17 days, compared with 3.796 inches on 13 days in 1902, and 4.309 inches on 22 days in 1903. The maximal temperature in the shade was 71.5° on the 6th, the minimal shade temperature was 43.0° on the 2nd. The heaviest daily rainfalls were .440 inch on the 15th, and .410 inch on the 14th. At this station the rainfall in June was 2.494 inches on 12 days; the thermometer rose to 66.3° in the screen on the 4th, and fell to 43.0° on the 27th. The rainfall from January 1 to July 31, inclusive, was 19.248 inches on 121 days, compared with 18.274 inches on 108 days in the first seven months of 1902, and 23.855 inches on 130 days in that period of 1903.

At the Royal Botanic Gardens, Glasnevin, Dublin, rain fell on 14 days to the amount of 1.32 inches, the greatest rainfall in 24 hours being .37 inch on the 25th.

The rainfall at the Ordnance Survey Office, Phœnix Park, Dublin, was 1.440 inches on 16 days. This amount includes a measurement of .365 inch on the 25th. The total amount of sunshine was 207.0 hours, the largest daily duration being 15.2 hours on the 7th.

At the Railway Hotel, Recess, Connemara, the rainfall was 5.866 inches on 17 days. The maximal falls for the month were .650 inch on the 4th and again on the 21st, .620 inch on the 12th, and .610 inch on the 13th. There were frequent heavy showers.

At Cork, 3.56 inches of rain fell, or 1.11 inches over the average,

the number of rainy days being 16, and the greatest day's rainfall being .91 inch on the 14th.

Dr. J. Byrne Power, F.R. Met. Soc., Medical Superintendent Officer of Health, Kingstown, reports that the mean temperature at that health resort was 60.7°, being 0.3° below the average for July during the previous 6 years, the extremes being—highest, 74.2° on the 20th; lowest, 48.5° on the 7th. At Bournemouth the mean was 64.5°, the extremes being—highest, 80° on the 20th; lowest, 51° on the 3rd. These figures again confirm the statement that the summer heat on the south coast of England is excessive as compared with that of Kingstown. The mean daily range of temperature at Kingstown was 13°, and at Bournemouth 14.7°. The relative humidity was 75 per cent. The mean temperature of the sea at Sandycove bathing-place was 55.4°, being 2.6° below the average for the month during the previous 6 years. The total rainfall was 0.67 inch on 14 days, being 2.27 inches below the average for July during 14 previous years (1873–83) and (1901–03), and the absolute lowest for the month during these 14 years, excepting July, 1878, which amounted only to 0.45 inch. The total rainfall at Bournemouth was 2.11 inches on 10 days. The total duration of bright sunshine was 203.2 hours, as compared with 207 hours at the Ordnance Survey Office, Phœnix Park, 188.3 hours at Valentia, 154.4 hours at Parsonstown, 196.4 hours at Southport, and 242.4 hours at Eastbourne.

CARBOLIC ACID IN SMALL-POX.

An extraordinarily rapid involution of small-pox was seen by L. W. Seymour (*Semaine médicale*, 1903, No. 16, page 132) to result from the internal administration of carbolic acid, which he prescribed in the following manner:—℞ Acidi Carbolici Liquefacti, min. xii; Quininæ Sulphatis, gr. 12; Acidi Sulphurici diluti, min. xx; Glycerini, min. xl; Aquæ destillatæ, ʒiv. M. ft. mist. Signa: One-fourth part to be taken at intervals of 4 hours.—*E. Merck's Annual Reports*, Vol. XVII., 1903, p. 5. Darmstadt, May, 1904.

PERISCOPE.

THE LIVER AND THE APPENDIX!

The unconquerable vermiform appendix has displayed its capabilities of mischief in yet another direction! It causes *cirrhosis of the liver* in some persons: and this clinical fact has recently been ably discussed by MM. Th. Tuffier and A. Mauté (*La Presse Médicale*, 29 Juin, 1904). But recently Professor Dieulafoy introduced the "*appendicular liver*" to the admiring gaze of the pathological world: this included not only *purulent infective hepatitis*, but a toxic hepatitis, characterised by a degeneration of the parenchyma produced by acute intoxication. Either of these complications is far from rare. Bertholin collected, in 1895, 28 cases of *hepatic abscess* traceable to an *appendicular* origin. [*Complications hépatiques de l'appendicite.* These, Paris, 1895.] Quite a considerable number of observers have since that date added observations of their own to the list. Cases of *acute toxic* (or toxi-infective) *hepatitis* have been recorded by Dieulafoy, Lorrain, Barth, and Ménétrier and Aubertin. Consideration of these notable facts and their comparatively rapid accumulation led MM. Tuffier and A. Mauté to inquire whether the relationship of cause and effect could not be more widely established between pathological appendix and morbid liver; and whether a chronically diseased appendix might not sometimes be incriminated with the genesis of the cirrhoses of intestinal origin. These observers believe that they have collected convincing evidence of such connection. Letulle, in 1879, had found an annular cirrhosis in a youth of sixteen, who had succumbed to a perforative appendicitis. Achard, in 1894, met with a case in which patches of sclerosis were found in the liver of a patient who had been the victim of suppurative hepatitis. In the course of last year Barth published the clinical history of a case of appendicitis which terminated in recovery, but in which he had found that the local infection had produced a considerable tumefaction of the liver in the course of some hours, with a feeling of "hardness comparable to that of cirrhosis." The occurrence of jaundice in connection with appendicitis has often been noticed. MM. Ménétrier and Aubertin published last year two cases of acute yellow atrophy of the liver of appendicular

origin. Now, the last link supplied towards bridging over the space between the appendix below and the liver above is offered by MM. Tuffier and Mauté. In the case of a lad of sixteen, who succumbed to peritoneal (and other) complications of appendicitis, these observers found a liver with thickened edges, resistant to the touch, of greyish yellow tint, presenting a finely granular surface on section—with undeniable features of clearly defined *portal cirrhosis* shown by microscopic examination. We cannot help asking ourselves what mischief is the appendix going to do next!

ROYAL ARMY MEDICAL CORPS.

THE undermentioned gentlemen were successful at the examination held in London in July, 1904, for Commissions in the R.A.M.C., and for which 49 candidates entered:—

Marks.	
590	William Byam, M.R.C.S. (Eng.). L.R.C.P. (Lond.).
586	Charles Ryley, M.R.C.S. (Eng.), L.R.C.P. (Lond.), D.P.H. (Lond.).
571	Harry Theodore Wilson, M.R.C.S. (Eng.), L.R.C.P. (Lond.).
567	Lionel Victor Thurston, M.R.C.S. (Eng.), L.R.C.P. (Lond.).
565	Walter Hyde Hills, M.B., B.C. and B.A. (Cantab.).
560	Patrick Dwyer, M.B., B.Ch. (R.U.I.).
556	Phillip Claude Tresilian Davy, M.R.C.S. (Eng.), L.R.C.P. (Lond.), M.B. (Lond.).
547	John Forbes Cock Mackenzie, M.B., B.S. (Melbourne).
540	Arthur William Gater, M.R.C.S. (Eng.), L.R.C.P. (Lond.).
536	George Alfred Duncan Harvey, L.R.C.P. & S.I.
536	Harold Charles Winckworth, M.R.C.S. (Eng.), L.R.C.P. (Lond.), L.D.S. (Eng.).
534	James Campbell, M.B., B.Ch. (R.U.I.).
531	Richard Collis Hallowes, M.B., B.Ch., B.A.O. (Dubl.). B.A. (Dubl.).
530	Harry William Russell, M.B., B.Ch. (Vict.).
523	George Richard Painton, M.R.C.S. (Eng.), L.R.C.P. (Lond.).
523	Meurice Sinclair, M.B., B.Ch. (Edin.).
512	Evelyn John Hansler Luxmore, M.R.C.S. (Eng.), L.R.C.P. (Lond.).
505	Kenneth Alan Crawford Doig, M.R.C.S. (Eng.), L.R.C.P. (Lond.).

Marks.

503 Herbert Owen Marsh Beadnell, M.R.C.S. (Eng.), L.R.C.P. (Lond.).

500 Herbert St. Maur Carter, M.D., M.B., B.Ch. (Dubl.), B.A. (Dubl.).

499 Robert Harry Lucas Cordner, M.R.C.S. (Eng.), L.R.C.P. (Lond.).

494 John Patrick Lynch, L.R.C.P. & S.I.

490 Alastair Norman Fraser, M.B., B.Ch. (Edin.).

489 Nelson Low, M.R.C.S. (Eng.), L.R.C.P. (Lond.).

487 Percy Arnold Jones, M.R.C.S. (Eng.), L.R.C.P. (Lond.), B.A. (Cantab.).

485 Cecil Roy Millar, L.R.C.P. & S.I.

482 Agustine Thomas Frost, M.B., B.Ch. (R.U.I.).

482 George Herbert Richard, M.R.C.S. (Eng.), L.R.C.P. (Lond.).

482 Harry Christopher Sidgwick, M.R.C.S. (Eng.), L.R.C.P. (Lond.), M.B. and B.A. (Cantab.).

477 John St. Aubyn Maughan, L.R.C.P. & S. (Edin.), L.F.P. & S. (Glas.).

ROYAL COLLEGE OF SURGEONS OF EDINBURGH.

At a meeting of the College held on Thursday, July 28th, 1904, the following gentlemen, having passed the necessary examinations, were admitted Fellows of the College:—David Macrae Aitken, M.B., Ch.B., Edinburgh; Robert Gordon Bell, M.D., Sunderland; Chiranjiva Bharadwaja, L.R.C.S.E., Edinburgh; William Thomas Chenhall, M.D., Sydney; Frederick Gardiner, M.D., Edinburgh; Alfred Griffiths, M.B., C.M., Falkirk; Arthur Gwyther, M.B., C.M., Captain, I.M.S.; Thomas Dufour Halahan, M.B., Ch.B., Devonport; Claude Somerville Hawkes, M.R.C.S. Eng., Queensland; Edmund Moritz Illington, M.R.C.S. Eng., Captain, I.M.S.; James Frederick Merrillees, M.B., Ch.B., Melbourne; Thomas Mill, M.B., Ch.B., Cardiff; Philip Henry Mules, M.B., L.R.C.S.E., Edinburgh; Lionel Charles Peel Ritchie, M.B., Ch.B., Edinburgh; Oscar Bagster Trumper, M.B., Ch.B., Market Rasen; and Henry Woolmington Webber, M.D., M.R.C.S. Eng., Plymouth. The Medal and set of books forming the "Bathgate Memorial Prize," presented to the College by Colonel William Lorimer Bathgate in memory of his late father, William McPhune Bathgate, Fellow of the College, was awarded to Mr. Robert Macnaught Glover, Carlton House, Dumfries.

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Royal University of Leyden,

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